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Dedication

To my family.

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Korean Evidentials in Discourse

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The purpose of this dissertation is a study of Korean evidentiality on the basis of presuppositional analysis. My claim is that Korean evidentiality can be accounted for under the binding theory of presupposition (Asher & Lascarides 1998; 2003; Asher 2000). The proposal I motivate in this dissertation is that interpretations of Korean evidentials can be handled using the same mechanism which resolves anaphoric expressions. Dynamic Semantics such as DRT and SDRT give a contribution to account for phenomena like anaphora bridging, presupposition, and accomodation by the update procedure of the discourse structure.

I investigate Korean evidentials by examining their distributions and functions in Korean grammar and specifying the types of information source in Korean evidential system. In particular, there are three evidential types in Korean: Direct *te*, Reportative *tay*, Inference *ci*. I propose that the Korean evidential system corresponds to B-1 system in Aikhenvald (2004). I also give an analysis of the intonation phrase of utterances featuring Korean evidentials with the autosegmental-metrical model of intonational phonology.

Moreover, I argue that Korean evidentials are presupposition triggers. To verify my claim, I provide various tests such as negation, challengeability and the interrogative flip. All the tests support for classifying Korean evidentials as one category. I also review and compare three different theoretical frameworks: modal, illocutionary and presuppositional analysis. I reject a

modal analysis and an illocutionary analysis and employ a presuppositional analysis for Korean evidentiality. I propose that Korean evidentiality can be explained in terms of SDRT (Asher & Lascarides 1998; 2003). Asher & Lascarides (1998) regard presupposition resolution as an integrated part of the task of building discourse relations. I also show that the speaker-dependency of evidentiality is explicitly associated with characteristics of indexicals. Just as in the line of work stemming from Hunter & Asher (2005), I demonstrate that Korean evidentials are anaphorically resolved by the extra-linguistic context as well as by the linguistic context.

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Chapter 1

Introduction

The purpose of this dissertation is a study of Korean evidentiality - encoding of the source of information - on the basis of presuppositional analysis. My claim is that Korean evidentiality can be accounted for under the binding theory of presupposition (van der Sandt 1992; Asher & Lascarides 1998; 2003; Asher 2000). This dissertation is structured as follows.

In chapter 2, I investigate Korean evidentials by examining their distributions and functions in Korean grammar and specifying the types of information source in Korean evidential system. In particular, I survey the cross-linguistic typology of evidentiality, review the previous literature and elaborate characteristics of Korean evidentials. As a result of considering cross-linguistic researches, I propose that the Korean evidential system corresponds to B-1 system in Aikhenvald (2004). I also give an analysis of the intonation phrase (IP) of utterances featuring Korean evidentials.

In chapter 3, I argue that Korean evidentials are presupposition triggers. To confirm the Korean evidential system proposed in chapter 2, I provide various tests such as negation, challengeability and the interrogative flip. All the tests support for classifying Korean evidentials as one category. I also review and compare three different theoretical frameworks: modal, illocutionary and presuppositional analysis. I reject a modal analysis and an illocutionary analysis based on several diagnostic tests and employ a presuppositional analysis for Korean evidentiality because the Korean data provide empirical evidence supporting this. The merit of my analysis becomes clearer when only presuppositional analysis can explain the phenomenon like trapping.

In chapter 4, my main concern is the formal analysis of Korean evidentiality. I propose that Korean evidentiality can be accounted for under binding theory of presupposition (van der Sandt

1992; Asher & Lascarides 1998; 2003). Asher & Lascarides (1998) is an extension of the anaphoric presupposition theory by van der Sandt (1992). Asher & Lascarides (1998) regard presupposition resolution as an integrated part of the task of building discourse relations such as *Narration* and *Background*. I also show that the speaker-dependency of evidentiality is explicitly associated with characteristics of indexicals. I propose that Korean evidentials are anaphorically resolved by the extra-linguistic context as well as by the linguistic context following Hunter & Asher (2005).

Chapter 5 summarizes the content of the dissertation and provides some issues I did not explicitly mention in the previous chapters.

I now offer a brief introduction to some problems of Korean evidentiality expanding on some points to be made in the thesis. The term “Evidentiality”, according to Aikhenvald (2004:p.3), is defined as “a linguistic category whose primary meaning is the source of information.” In this dissertation, I propose that the Korean evidential system is compatible with a B-1 system, following a cross-linguistic study by Aikhenvald (2004: p. 105). In particular, I suggest that there are three evidential types in Korean: Direct *te*, Reportative *tay*, Inference *ci*. All three evidentials discussed in this dissertation share the same morpho-syntactic feature: they are suffixes in the verbal complex. Korean suffixes reportedly are related to various categories like tense, aspect, modality, or sentence types and in many cases they are easily interpreted as more than one category (H. Lee 1991). Thus, it is very difficult work to build a reliable evidential system in Korean because the interpretation of Korean evidentials is the result of interaction with other categories. In this dissertation, to confirm that my proposal properly accounts for the Korean evidentiality, I will carefully go over the functions of each evidential (chapter 2) and adopt some tests from the prior literature to identify the Korean evidentiality in an indirect way (chapter 3).

The Korean evidential system based on the types of information source will be discussed in

chapter 2. In this chapter, I provide a motivation for how the evidential system in Korean is built in this dissertation. Many researchers agree that the Korean suffix *te* is the evidential indicating that a speaker has direct evidence (e.g., J. Song 1997; J. Lee 2011). The Reportative evidentials are recently recognized and studied (e.g., N. Kim 2000; K. Chung 2005; D. Lim 2010). However, what remains unnoticed is whether there is the Inference evidential in Korean. As far as I know, Papafragou and Li (2002)’s study is the only one which assumed that *ci* is the evidential of “marking the certainty of a proposition” for purpose of their experiment but did not show any empirical evidence.

One of the reasons of including the Inference evidential in this study is that Korean evidential system will be cross-linguistically isolated without it because any evidential system composed of the Direct evidential and the Reportative evidential has not been reported in the previous studies (Aikhenvald 2004; Willett 1988). I do not claim that descriptions of language-specific systems are always compatible to cross-linguistic generalizations but rather that cross-linguistic generalizations can help explore how the types of information source are expressed in a given language. Therefore I provide various tests such as negation, challengeability and the interrogative flip in chapter 3 to test the Korean evidential system proposed above. All the tests outlined in chapter 3 support for classifying Korean evidentials as one category (as a subsystem under Korean suffix system).

Moreover, the Korean evidential system proposed above seems to be a problem for a systematic analysis of syntax-semantics interface level. In particular, the Direct evidential *te* has been often analyzed as a tense or modal marker because it is located in a non-terminal position of the sentence which is reserved for Tense-Aspect-Modal markers (Hereafter TAM) in Korean. On the other hand, *ci* which is categorized as an evidential in this dissertation is a suffix and its distribution is always in sentence final position which is reserved for sentence types. Aikhenvald

(2004: pp. 80-82) has convincingly shown that evidentials can be realized via several different grammatical or syntactic categories, I address this issue in chapter 3.

On the other hand, the previous studies (de Haan 1998; Faller 2002; Willett 1988) tried to build up evidential scales based on the source of information. According to Davis et al. (2007), some evidentials are perceived to be stronger than others, and this can affect the degree of certainty of the propositional content. In this dissertation, I will not offer evidential scale of Korean. However, I briefly review Faller's (2002) proposal and show the reasons to reject it. Example (1) is the cross-linguistic evidential scales by Faller (2002).

(1) a. The Personal Evidence Cline:

performative > visual > auditory > other sensory > inference from results
> reasoning > assumption

b. The Mediated Evidence Cline.

direct > secondhand > thirdhand > hearsay/folklore

(Faller 2002: p. 228)

Faller (2002) proposed that the cross-linguistic evidential scales are non-linear in contrast to the proposals by de Haan (1998) and Willett (1988). Specifically she claims that it is hard to decide the relative ordering of Inference and Reprotative, so that there are two separate evidential clines which hold cross-linguistically. She also pointed out that evidential scales should order evidence types, not evidentials and proposed that evidential scales should be partial orders because of various factors like the quality of the source and the propositional content.

However, in Korean it seems that Faller's cross-linguistic scales cannot reflect some important features in the Korean data. First of all, it is not necessary that source of information is

directly linked to a speaker's degree of certainty in Korean. As for the evidential scales, one of the universal prediction is that the Direct evidential is the strongest one. However, the Korean Direct evidential *te* whose certainty may mingle with mirativity cannot be predictable under Faller's evidential scales. As proposed by Strauss (2005) and K. Chung (2010), *te* conveys a speaker's surprise because what (s)he did not expect happened. This is clearly related to mirativity. Mirativity is the grammatical marking of new and unexpected information (Downing 2001; DeLancey 2001) including not only 'surprise' but also 'disbelief'¹. Hence, based on this observation, the proposal that the Direct evidential in Korean is the strongest one in the scale is rejected.

Furthermore, it should be noted that context as well as interaction with other suffixes can affect a speaker's degree of certainty in Korean. For example, as pointed out by H. Lee (1999), *ci* is used to express the speaker's commitment to a proposition with various degrees of certainty from conjecture to assurance depending on contextual factors. I also should consider the interaction between evidentials and other categories such as epistemic modality and tense. As shown in section 2.2.4, modals lower a speaker's degree of certainty stemming from any types of evidentials in Korean. In light of the above finding, I will not consider any scale in the Korean evidential system.

There have been several proposals within the semantic analyses of evidentiality and most of them agree that there are at least two types of evidentials cross-linguistically (Murray 2010): illocutionary evidentials (Faller 2002) and epistemic evidentials (Izvorski 1997; Matthewson et al. 2007). In particular, the illocutionary analysis presents an analysis of evidentiality based on speech act theory inspired by Searle and Vanderveken (1985) and treats evidentials as

¹ Delancey (1997; 2001) and Aikhenvald (2004) argue that mirativity is a distinct system from evidentiality. However, at least in the case of *te* in Korean, its evidentiality and mirativity cannot be clearly separated.

illocutionary operators (Faller 2002; Murray 2010), whereas the modal analysis assumes that evidentiality is a subtype of epistemic modality and treats evidential implications as presuppositions (Izvorski 1997; Matthewson et al. 2007). Unfortunately, we cannot clearly explain Korean evidentials under any one of these analyses. In fact, any theory which assumes a uniform morpho-syntactic category for evidentiality in Korean faces the same problem. For example, *ci* is one of the sentence-terminal suffixes in Korean and can be used in various sentence types such as declarative, imperative, and interrogative by itself. If we only consider evidential *ci*, Korean evidentiality may be accounted for under speech act theory. On the other hand, *te* can occur under the scope of the antecedent of conditionals. This is one piece of supporting evidence that Korean evidential *te* is subsumed under the category of Tense, Aspect and Modality (TAM). In sum, previous formal analyses cannot fully explain Korean evidentials.

Given that evidentiality is expressed in a number of ways, a unified theory must look at how evidential markers function in the semantic system. Presuppositions appear promising because many different syntactic constructions and lexemes from different syntactic categories can give rise to presuppositions. Accordingly, I turn my attention to the binding theory of presupposition (van der Sandt 1992; Asher & Lascarides 1998; 2003; Asher 2000) in chapter 4. I investigate Korean evidentiality based on well-known proposal by van der Sandt (1992): all presuppositions are anaphoric. Asher & Lascarides (1998) account for presuppositions within SDRT, an extension of the dynamic semantic theory of DRT, which add another level of analysis that handles rhetorical relations such as *Narration*, *Background*, *Explanation* and so on (Asher 1993; Asher & Lascarides 2003).

Asher & Lascarides (1998) provide two kinds of discourse relations in their work. One of them is *Background* and another is *Defeasible Consequence*. Asher & Lascarides (1998) demonstrated that one of two rhetorical relations always links a presupposition to the discourse

context. I have already argued that the Korean evidentials are presupposition triggers in chapter 3. In this regard, one might predict that Korean evidentials are analyzed under two rhetorical relations. However, we cannot apply *Background* to Korean evidentials because Korean evidentials do not follow the *axiom on Background*: the discourse relation of *Background* requires that the aspect of information treated as background to another proposition should be stative but presuppositional content, that is, the source of information of Korean evidentials are definitely not stative. Instead of *Background*, for example, *tay* requires a specific discourse relation as *evidence* which is given by the lexical meaning of the Reportative evidential.

I will argue that the binding theory of presupposition provides an account of Korean evidentials in chapter 3 and I introduce the presuppositional analysis under the SDRT theory framework in chapter 4. However, there are some remaining issues for a presuppositional analysis of Korean evidentials. For example, D. Lim's (2010) presuppositional analysis of *tay* is motivated by the Kaplanian theory of indexicals. I also show that the speaker-dependency of evidentiality is explicitly associated with characteristics of indexicals. Just as in the line of work stemming from Hunter & Asher (2005), I propose that Korean evidentials are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. Hunter & Asher (2005) can explain the reason that Korean evidentials such as *te* or *tay* should be anaphorically resolved in the most global context but not always.

Chapter 2

Evidentials in Korean

In this chapter, I present Korean evidential system and point out the similarities as well as differences between Korean evidential system and cross-linguistic predictions. I propose that the system of Korean evidentiality² is compatible with the B-1 system in Aikhenvald (2004: p. 105). Three evidentials in Korean are subgrouped depending on their source of information: Direct *te*, Reportative *tay*, Inference *ci*. All three evidentials in this dissertation share the same morpho-syntactic feature; they are suffixes in the verbal complex.

The templatic structure of Korean verbs consists of a verb stem and various suffixes. The verbal suffixes can be classified into two groups based on their distribution in the verbal complex: non-terminal suffixes and terminal suffixes. A verbal stem always occurs with a terminal suffix and arbitrarily takes non-terminal suffixes. This distinction is important because the main function of each type of suffix is differentiated. In particular, the direct evidential *te* is located in a non-terminal position of the sentence which is mainly reserved for TAM markers in Korean. On the other hand, the inference evidential *ci* in this dissertation is distributed in the sentence final position which is reserved for sentence types. As mentioned above, descriptive approach may result in an analysis in which evidentiality does not correspond to a specific syntactic category.

² In this dissertation, I will not offer an extensive history of the development of the concept “evidentiality”. However, I briefly explain the origin of this term. The term “evidential”, as cited in Floyd (1999), appears in Swadesh (1939) and in Boas (1947), but it refers to only inference. With Jakobson’s work on Slavic (1971) came two important contributions: he introduced evidential as a grammatical category distinguished from mood that concerned the marking of information source in general, and he also suggested that the evidentiality exist in Bulgarian by introducing the notion that evidential might be a relevant concept for the description of languages outside the Americas. Since then, the term “evidentials” has been applied to a broad range of syntactic and semantic structures. Aikhenvald (2004) and Floyd (1999) provided a thorough history of evidentiality.

Lastly, I provide a case study of the intonation of Korean evidentials based on the observation that a speaker's degree of certainty is sensitive to a context or the interaction between evidentials and other categories such as epistemic modality and tense. The first purpose of the experiment is to examine anaphoric relations between the source and the evidential. I also designed this experiment to investigate interactions between evidentials and TAM markers, based on K. Chung (2005) and J. Lee (2011)'s claim.

This chapter is organized as follows. In section 2.1, I investigate Korean verbal suffixes by examining their distribution and functions in the verbal complex. They can be classified into two groups based on their distribution in the verbal complex: non-terminal and terminal suffixes. The non-terminal suffixes include various categories such as TAM or honorific markers. We also consider terminal suffixes centering on the relation between sentence types and speech acts. In section 2.2, I review the cross-linguistic typology of evidentiality and the previous literature which offered a system or characteristics of Korean evidentials. As a result of considering cross-linguistic researches, I propose that Korean evidential system corresponds to B-1 system in Aikhenvald (2004). I also give an overview of each Korean evidential type and describe its function and meaning. . In section 2.3, I explore a speaker's degree of certainty which is sensitive to a context or the interaction between evidentials and TAM markers by examining the frequency of intonation phrase (IP) tones of utterances featuring Korean evidentials. I analyze the IP tones with the autosegmental-metrical model of intonational phonology.

2.1 Tense/Aspect/Modal (TAM) and Sentence Types in Korean

In this section I will briefly present the descriptions of Korean verbal suffixes. They can be classified into two groups based on their distribution in the verbal complex: non-terminal suffixes and terminal suffixes. The non-terminal suffixes include various categories -such as Tense-

Aspect-Modal - which are often treated together since many of them can fall into more than one category. Korean has a rich inventory of sentence-terminal suffixes which can be simultaneously classified by sentence types and sentence styles. I discuss the applicability of the theoretical framework of Searl (1969) in analyses of Korean terminal suffixes.

2.1.1 The Verbal Suffix System in Korean

Korean features an SOV structure in which the predicate (verb or adjective) is located at the end of the sentence. It is generally accepted that Tense-Aspect-Modal or honorific markers are denoted by inflectional verbal suffixes in agglutinative languages like Korean. However, it is also possible that some TAM expressions are denoted by periphrastic expressions like the verb serial constructions³ or dependency noun constructions⁴ in Korean.

The basic structure of Korean verbs (or adjectives) consists of a verb stem and suffixes. A verbal stem always occurs with a terminal suffix and arbitrarily takes non-terminal suffixes. H. Sohn (1994:p.300), as cited in Cinque (1999), made up an example containing all possible categories of predicative suffixes:

³ According to H. Sohn (1999: p. 380), Korean verbal serial constructions are composed of two or more predicates which denote sequential actions or states that denote a single coextensive or extended event. See the following example.

Jieun-i kwaca-lul cip-e mek-ess-ta
 Jieun-Nom snack-Acc pick up-Comp eat-Ant-Dcl
 'Jieun picked up a snack and ate it'

⁴ Korean allows for nouns taking a clausal complement in precopular position. In other words, dependency noun constructions consist of a clausal complement and a dependency noun.

Jieun_i-un [*pro_i* piano-lul chi-l] kes-i-ta.
 Jieun-Top piano-Acc play-Adn DN-be-Dcl
 'Jieun would play the piano.'

In the above example, the precopular dependency noun, *kes* denotes a psychological state of 'possibility' and takes a clausal complement which describes the content of the possibility. The dependency noun constructions are embedded in the verb phrase headed by the copula *i*, which is in turn embedded in layers of functional projection of modality.

(2) Ku-pwun-i cap -hi -si -ess-ess -keyss -sup -ti -kka?

The-person.HON-NOM catch -A -B -C -D -E -F -G-H

‘Did you think that he had been caught?’

The suffixes are: passive (A), subject honorific (B), Anterior(C), past or perfect (D), conjectural modal (E), addressee honorific (F), retrospective mood (G), and interrogative sentence type (H).

(H. Sohn 1994: p.300)

Korean verbal suffixes can be classified into two groups: non-terminal suffixes and terminal suffixes. This distinction is important because the main function of each type of suffix is correlated with its position in the templatic structure. A non-terminal suffix can go in slot (A) – (G). In particular, the direct evidential *te* is located in a non-terminal position of the sentence which is mainly reserved for TAM markers in Korean. On the other hand, a terminal suffix should go in slot (H). As a result, the inference evidential *ci* in this dissertation is distributed in the sentence final position which is reserved for sentence types. According to Cinque (1999), if we ignore honorific suffixes and polite suffixes, relative order of Korean suffixes is compatible with the order of the functional heads shown in (3).

(3) Mood⁵_{speech act} > Mood_{evaluativ}⁶ > Mood_{evidential} > Modality > T(Past) > T (anterior) > Voice

⁵ According to Lyons (1977), the term ‘mood’ should be replaced by ‘sentence types’. Traditionally the notion of mood is expressed in the verbal inflection of many languages such as Latin, Greek and French which have indicative, subjunctive and imperative moods. Moreover, Lyons classifies sentences by three basic types: declaratives, interrogatives, imperatives.

⁶ Cinque suggested that another type of suffix can be inserted between evidential and speech act mood. It is called the evaluative mood. The evaluative mood carries a sense of surprise on perceiving some element of new information. Therefore, this slot is directly linked to the mirative.

If you carefully compare (2) and (3), you can find one difference. Cinque (1999) replaced the term “retrospective mood” by “evidential”. This is intriguing because an independent slot is reserved for an evidential in the Korean suffix system. Recall that there are two types of evidentials cross-linguistically: illocutionary evidentials (e.g., Faller 2002; Murray 2010) and epistemic evidentials (Izvorski 1997; Matthewson et al. 2007). Specifically, illocutionary evidentials have been analyzed under speech act theory, while epistemic evidentials have been analyzed as modality. The former can explain about the inference evidential *ci* but cannot find a way to analyze the direct evidential *te* because it is syntactically heterogeneous. The latter faces the same problem for the inference evidential *ci*. In a nutshell, the previous analyses cannot handle the scattered coding of evidentiality in Korean. We will go back to this issue in chapter 3.

2.1.2 Tense/Aspect System in Korean

I posit that the Korean tense system has two tenses⁷: *ess*⁸ for anterior and \emptyset for non-anterior, following Y.Ahn (1995)⁹. Anterior *ess* locates a situation time simultaneously with or prior to reference time and non-anterior \emptyset locates a situation time with reference time. “The time relation of ‘anterior’ is interpreted as relative past tense or perfective aspect depends on whether the

In this thesis, I will not consider the mirative in Korean.

⁷ According to Sarkar (1998), the term *tense* is used to indicate the tense morphology of a language which refers (although not exclusively) to the temporal representation. Usually this notion is used to denote the grammatical category realized by the inflectional element. In addition, *tense system* is taken to mean the mechanisms of temporal interpretation common to all natural languages, for instance, a Reichenbachian tense diagram (Reichenbach 1947) or a Priorian past tense operator (Prior 1967).

⁸ The morpheme *ess* has several allomorphic variants: *ass* appears when the verb stem ends with a vowel such as *a* and *o*; *y(e)ss* appears when the verb stem ends with *ha*, and *ess* elsewhere. The suffixation *ess* and *ass* to a vowel final stem results in a sequence of two vowels, though often one of the vowels, usually the vowel of the stem, is deleted.

⁹ In her system, *te* is also categorized as a tense with the meaning of “retrospect”, however, in this dissertation, *te* is categorized as an evidential.

speaker focuses on the location of the reference point about the situation described or on the location of the situation about the reference point (H. Lee 1991).”

I here turn my attention to anterior *ess*. A group of researchers argued that past tense is the basic meaning of *ess* though most of them consider other aspects (D. An 1980; C. Lee 1987). Consider the following example.

(4) Nay-ka ecey/#cikum/#nayil cenyek moim-ey ka-ss-e.

I-Nom yesterday/now/tomorrow dinner meeting-Loc go-Ant-Dcl.

‘I went to the dinner meeting yesterday/#now/#tomorrow.’

The above example in (4) shows that the suffix *ess* represents the past meaning. When the suffix *ess* occurs with time adverbs in the sentence, the past meaning seems to be clearer. However, as observed by a number of researchers including H. Lee (1991) and K. Chung (2005), the proposal that *ess* simply represents the past tense should be rejected. First, past tense cannot refer to the situation whose time reference is future but the suffix *ess* can. Second, the suffix *ess* can occur with time adverbs which denote the present time reference.

(5) a. Wuli-ka siksa-lul ta ha-yss-ul ttay jwun-un tochakha-lkke-ya.

we-NOM meal-ACC all eat-PFCT-ATT time Joon-TOP arrive-FUT-DEC

‘Joon will arrive when we have finished eating.’

(K. Chung 2005: p. 36)

b. I cwu cen-ey mikwuk-eyses ponay-n phyenci-ka cikum o-ass-ta.

two week ago-Loc USA-Loc send-Com letter-Nom now come-Ant-Dcl

‘The letter which was sent from USA two weeks ago has come now.’

Before we discuss examples in (5) in detail, we must say a little more about tenses in embedding constructions. The evaluation time of Korean tenses in embedding constructions is not the utterance time, but some other time interval. For example, the embedded tense of a verbal complement clause is interpreted with respect to the tense of the matrix clause. The situation time of *ess* in (5a) refers to in the matrix clause is located in the future and at the same time anterior to the main future event. This is not the case with the simple past in Italian or German, even though the present perfect can be used for future in those languages. The example in (5b) describes present situations, not past situations. Based on the observation of the examples like (5b), K. Nam (1978; 1996) argues that *ess* is a perfective aspect morpheme, not a past tense. However, his claim is clearly rejected by the evidence that *ess* can occur with aspectual markers such as the progressive *ko iss* or resultive *e iss* because perfectives should not occur with progressive aspect. This is a crucial piece of empirical evidence against characterizing *ess* as a solely perfective marker.

(6) a. Yengi-un ppang-ul mek-ko iss-ess-ta

Yengi-Top bread-Acc eat-Prg-Ant-Dcl

‘Yengi was eating bread.’

b. Yengi-un aphu-ase chimtay-ey nwu-e iss-ess-ta

Yengi-TOP sick-because bed-Loc lie down-Result-Ant-Dcl

‘Yengi has lied down on the bed because she is sick.’

Give examples above in (6) show that the suffix *ess* can be neither a past tense marker nor a perfective aspect marker exclusively. First of all, it cannot be a past tense marker, because the

suffix gives a meaning of completion or perfect of result rather than a past tense meaning. Furthermore, the suffix marker may refer to a situation whose time reference is future. On the other hand, it is hard to assert that *ess* is an aspectual marker because *ess* can occur with aspectual marker such as the progressive *ko iss* or resultive *e iss*. In sum, the tense-aspect neutral notion of anterior accounts for both cases with relative past tense interpretation and with the perfective aspectual interpretation.

2.1.3 The Modal System in Korean

Previous studies (Bybee 1985; Palmer 1986) offer two types of modality. Agent-oriented modality expresses the conditions on the agent such as ability, obligation and permission with respect to the proposition whereas epistemic modality expresses the degree of the speaker's commitment to the truth of the proposition. At this point, I will go over a basic picture of the Korean modal system focusing on epistemic modality because "one of the central cross-linguistic questions in the study of evidentiality is how it is related to epistemic modality (Faller 2002)." Basically I adopt terms and inventory from Wymann (1996) to classify Korean modality following Palmer (1986) and Bybee (1985). This insightful observation on Korean modality by Wymann (1996) has been further refined by Ammann & van der Auwera (2002).

	Agent-oriented (deontic)	Epistemic
Possibility	swu iss, myen toy	swu iss, kes kath
Necessity	e/a ya ha, ci anhumyen an toy	kes i, keyss

Table 1: Central modal constructions of Korean (Ammann & van der Auwera 2002)

In table 1, modality is subgrouped based on the dichotomies (i) possibility and necessity, and (ii)

agent-oriented and epistemic modality. Modal logic began with Aristotle’s analysis of statements containing the words *necessary* and *possible*. These are dual modalities that are abundant in natural language. It is now common to use the symbol \Box for a modality of universal character, and \Diamond for its existential dual. In the system based on classical truth-functional logic, \Box is equivalent to $\neg\Diamond\neg$, and \Diamond to $\neg\Box\neg$, where \neg is the negation connective. Thus “necessarily” means “not possibly not”. Another primary distinction we will make in Korean modality is how agent-oriented modality differs from epistemic modality. We take this distinction because agent-oriented modality concerns aspects internal to the state of affairs that the proposition reflects, whereas epistemic modality concerns the speaker’s degree of certainty about a proposition.

Epistemic modality is expressed in different morpho-syntactic forms from language to language, though epistemic modality is cross-linguistically expressed under the verbal complex (Bybee et al. 1994). In 2.1.1, I briefly reviewed Korean verbal suffixes. Korean verbal suffixes can be classified into two groups based on their distribution in the verbal complex: non-terminal suffixes and terminal suffixes. The Korean TAM suffix *keyss* is subsumed under non-terminal suffixes and functions as an epistemic necessity operator.

(7) a. Nayil Seoul-ey pi-ka manhi o-keyss-e.

Tomorrow Seoul-Loc rain-Nom much come-Mod-Dcl

‘(It is certain that) it will rain a lot in Seoul tomorrow’

b. Nay-ka 2 si-kkaci Akhateymi kukcang-ey ka-keyss-ta.

I-Nom 2 o’clock-by Academy theater-Loc go-Mod-Dcl.

‘I will go to the Academy theater by 2 o’clock’

While the meaning of *keyss* in (7a) is prediction and it functions as a modal suffix, in (7b) it has the meaning of volition when the sentence has a first person subject. We will not consider the deontic (volitional) meaning of *keyss* in this dissertation. On the other hand, modal operators, *l swu* and *l kes* play a role as an epistemic possibility and epistemic necessity operator in Korean. In fact, those operators' inner structure is a combination of the future tense marker (*l*) and a Dependence Noun¹⁰ (*swu* or *kes*). Periphrastic suffixes are different from ordinary inflectional suffixes in that they attach to the edge of a phrase, rather than to a verb stem. Roughly speaking, a periphrastic suffix *l kes* semantically functions as a modal operator like an auxiliary in English. However, it can be syntactically separated each under adnominal clause and under embedding clause in (8).

- (8) a. Jieun_i-un [*pro*_i chinkwu-lul mana-l] kes-i-ta.

Jieun-Top friend-Acc meet-Adn DN- be-Dcl

‘Jieun would meet a friend.’

- b. Chelswu_i-ka [*pro*_i sicang-ey ka-l] swu iss -ta.

Chelswu-Nom market-Loc go-Adn DN exist-Dcl

‘Chelswu might go to the market.’

Recall that the Korean tense system has two tenses: *ess* for anterior and \emptyset for non-anterior. Some researchers proposed a three way tense system including future. However, in Korean, future tense is very close to being part of the modal system. It is well known that there is a close relation

¹⁰ NPs such as *kes* and *swu* are classified as Dependency Nouns (DN) because they cannot occur without relative clauses.

between a tense operator and a modal operator. As a rule, future actions are interpreted in terms of epistemic modality because they are irrealis, and thus they correspond to probability, possibility, uncertainty, doubt. In many languages the future is indeed used as modality, rather than a tense, but there are languages with more than one future morpheme, and differences between these are attributable to differences in certainty.

2.1.4 Sentence Types and Speech Acts in Korean

Korean has a rich inventory of sentence-terminal suffixes which are also called a sentence ender. The Korean literature provides many descriptive works on the morpho-syntactic features of Korean terminal suffixes (K. Nam 2001; H. Sohn 1999; C.Suh 1996 among others). For example, K. Nam (2001) maintains that a group of final suffixes which can occur under embedded clauses are regarded as sentence types. According to H. Sohn (1999), there are six types of sentence styles marked by terminal suffixes, which can be simultaneously classified by sentence types. Each of these types and styles shows different degrees of formality or politeness (sentence styles)¹¹ as well as sentence types¹². There exist four different sentence types of verbal suffixes such as declarative, imperative, interrogative, and propositive.

¹¹ Following Martin (1992) and H.Sohn (1999), I give the brief descriptions of Korean sentence styles which express the social relationships between the conversational participants. The plain style is used typically by adults to children and by children among themselves. This style is used between intimate adult friends, too. The intimate style is most commonly used by children or adults alike to family members, or between close friends. The familiar style is slightly more formal than the intimate style, and is more commonly used by a male adult to an adolescent or between two close male adult friends who are not quite close enough to use the intimate style. The blunt style is not used very commonly nowadays. It is normally used when there is a conflict among politeness factors. The polite style is normally used among adults. Adults who are not close friends or relatives use this style and children use it to address adults in a polite way. The deferential style is used to someone to whom a certain reserve is in order: a high official, a professor, one's employer or superior person and so on.

¹² Nam & Ko (1985) have argued that there are two kinds of modality in Korean based on their distributional positions with respect to the suffixes: sentence final mood and non-final modality. The sentence final mood corresponds to the sentence type in the dissertation

	Declarative	Interrogative	Imperative	Propositive
Plain	ta	ni/nunya	kela/ela	ca
Intimate	e/a	e/a	e/a	e/a
Familiar	ney	na/nunka	key	sey
Blunt	so/(u)o	so/(u)o	wu	wu/(u)psita
Polite	(e/a) yo	(e/a) yo	(e/a) yo	(e/a) yo
Deferential	(su)pnita	(su)pnikka	sipsio	(u)psita

Table 2: Korean sentence types and styles (H. Sohn 1999: pp. 236-237)

Though most researchers of the previous literature basically consider speech acts theory for the list of sentence types, the criteria to identify sentence types are language particular like K. Nam's (2001) proposal above. It is important to understand how general theories of speech acts can shed a light on Korean sentence types. Searle (1969) assumes that a speech act is composed of F, illocutionary force indicating device and p, propositional content. The relation between them is formally represented as 'F (p)'. The central idea of the formula is that the connection between an utterance and its illocutionary force are determined by a linguistic convention. Sentence types which are associated with an illocutionary point, the intention of speakers, produce the kind of effect of illocutionary force by means of convention like the performative formula (Austin 1962). Let's see some examples from Korean.

(9) a. Younghee -ka namtongsayng pang-ul chiwu -ess-ta.

Younghee-Nom brother room-Acc clean -Ant-Dcl

'Younghee cleaned her brother's room.'

b. Younghee -ka namtongsayng pang-ul chiwu -ess-ni?

Younghee-Nom brother room-Acc clean -Ant-Int

‘Did Younghee clean her brother’s room?’

c. Younghee -ka namtongsayng pang-ul chiwu-ela.

Younghee-Nom brother room-Acc clean -Imp

‘Younghee, clean your brother’s room.’

Speech acts seem to correspond to the sentence types of declaratives, interrogatives, and imperatives in Korean. For example, in (9a), the illocutionary force of asserting is encoded within the sentence type of declaratives; in (9b), illocutionary force of questioning is encoded within the sentence type of interrogatives; and, in (9c), the illocutionary force of requesting is encoded within the sentence type of imperatives. The line of approach appears promising in connecting the speaker’s intentions to illocutionary acts. However, for example, consider *e/a*, the intimate level from Table 2.

(10) a. Younghee -ka namtongsayng pang-ul chiwu -ess-e. ↘

Younghee-Nom brother room-Acc clean -Ant-Dcl

‘Younghee cleaned her brother’s room.’

b. Younghee -ka namtongsayng pang-ul chiwu -ess-e. ↗

Younghee-Nom brother room-Acc clean -Ant-Int

‘Did Younghee clean her brother’s room?’

In contrast to sentence types of plain style above, there exists only one suffix *e/a* for the intimate style. Hence, the disambiguation is partially made by the contour of final syllable of falling (↘) or rising (↗), as shown in (10). Terminal contours are mapped informally to speech acts and then to the IP (intonational phrase) boundary tones (S. Jun 2000). The illocutionary force which is encoded through a sentence type is determined by the interaction of the semantic object expressed with the context. In sum, traditional speech acts theory faces crucial problems because it offers a matching between sentence type and speech acts determined in a pragmatically arbitrary way.

2.2 The Korean Evidential System

2.2.1 Evidential Typology of Korean

Since the first research on evidentiality in American Indian languages by Boas (1911), many studies of evidentiality have been conducted and most of them employ descriptive approaches (Chafe & Nicols 1986; Willett 1988; Aikhenvald 2004 and so on). One of most important contributions of descriptive study is that it helps to build up evidential systems cross-linguistically and makes it possible to predict the system of a specific language. Willett (1988)¹³ investigated data from 38 languages and observed that evidentials cross-linguistically fall into three general types: direct, reported, and inferring evidential. *Direct evidential* contrasts with two main types of *Indirect evidential* and each type can be sub-divided.

¹³ Willett (1988) briefly sketched out Korean evidentiality. The study proposed three types of evidentials in Korean: undisputed marker for unmarked indicatives *e/a*, reported evidential *tay*, and inference evidential *kwun*. As for direct evidence, the sentence-ender *ta* encodes information from the recent past, while retrospective suffix *te* encodes information from the distant past.

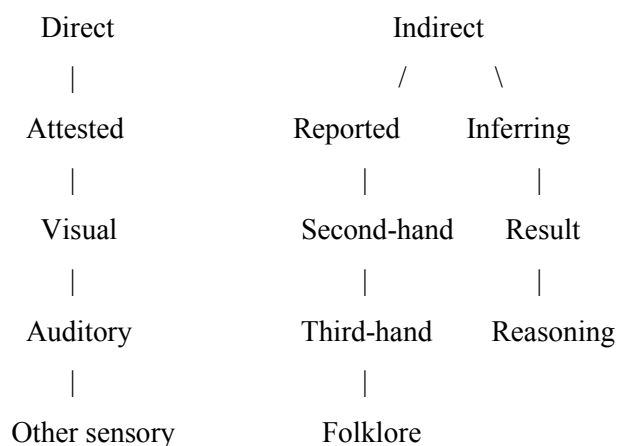


Figure 1: Types of evidentials (Willett 1988:p. 57)

As mentioned by Faller (2002), Willett's (1988) taxonomy predicts that evidential systems cross-linguistically make a distinction between indirect and direct evidentials. It also predicts that no language can have grammaticalized evidentials that belong to different mother nodes like direct and indirect. However, this assumption is not supported by empirical data. Faller (2002) based on the observation by Oswalt (1986) shows that the inference evidential *qǎ* is used for clearly inferential evidence as well as for certain kinds of sensory evidence. Empirical findings from Korean confirm Faller's (2002) explanation. We will return to this issue in 2.2.2.

The most extensive cross-linguistic study on evidentiality by Aikhenvald (2004) establishes the basic system through a cross-linguistic survey of over 500 languages. She finds that evidential systems make use of a typologically common pattern to specify distinct source of information.

(11)

- I. VISUAL: acquired through seeing.
- II. NON-VISUAL SENSORY: acquired through hearing (typically extended to smell, taste,

and sometimes touch).

- III. INFERENCE: based on visible or tangible evidence or results.
- IV. ASSUMPTION: based on evidence other than visible results, including logical reasoning, assumptions, or general knowledge.
- V. HEARSAY: reported but with no reference to who reported it.
- VI. QUOTATIVE: reported and including an overt reference to the source.

<Types of evidentials > (Aikhenvald 2004: p. 63)

The semantic parameters I through VI selectively play a role in different kinds of system. Specifically, Aikhenvald distinguishes between two-term (A), three-term (B), four-term (C), and five (or more)-term evidentiality systems (D). Among them, three-term systems involve at least one sensory value and include five attested types: B1 ‘Direct (or Visual), Inferred, Reported’, B2 ‘Visual, Non visual sensory, Inferred’, B3 ‘Visual, Non-visual sensory, Reported’, B4 ‘Non-visual sensory, Inferred, Reported’, and B5 ‘Reported, Quotative, Everything else’.

In this dissertation, I claim that the Korean evidential system falls into the B1 system in Aikhenvald (2004). Korean is an evidential language with all three evidential types—Direct, Reportative, and Inference evidentials.

(12) B1: Direct, Inferred, Reported¹⁴

Te: the speaker has direct (perceptual) evidence for the claim.¹⁵

¹⁴ It is commonly argued that the Korean ending *te* is an evidential indicating that the speaker has direct evidence (e.g. J. Song 1997; J. Lee 2010), but the existence of a Reportative evidential in Korean is still debated, with some researchers recognizing the sentential ending *tanta* as a whole as a Reportative evidential ending (e.g., N. Kim 2000; K. Chung 2005).

¹⁵ Strauss (2005) convincingly proposed that there are at least three direct evidential/mirative markers: *te*, *ney*, *kwun*. If we follow her analysis, the list of direct evidentials should include those. However, the issues about mirativity are beyond this thesis.

Tay: the speaker heard the information expressed in a claim from someone else.

Ci: the speaker's background knowledge, plus inferencing, leads him to believe the information in the claim to be true.

<Korean evidential system>

(13) a. Keki-nun pi-ka o-te-la.

there-Top rain-Nom come-Ev-Dcl

‘[I noticed] it was raining there.’

b. Cikum Sewul-ey pi-ka o-n-tay.

Now Seoul-LOC Rain-Nom come-Prs-Ev

‘[I heard] it is raining in Seoul.’

c. Cikum pi-ka o-ci

Now Rain-Nom come-Ev

‘[I infer] it is raining’

Before continuing, several considerations about the Korean evidentiality merit attentions. First, I need to clarify the criteria to build a reliable evidential system. Anderson (1986) and Aikhenvald (2004) agree at least on two features to detect evidentiality. The evidentiality should fall into the grammaticalized categories such as inflections and clitics and its primary meaning should be encoding the source of information. In the Korean data, the first criterion is met because all three types of evidentials are verbal suffixes. However, it is still hard to make a clear-cut distinction between primary meaning and secondary meaning. Second, I have to point out that the list of

evidentials proposed here is tentative. We open the possibility that we may add some evidentials in the future depending on how to explain mirativity in Korean. Mirativity is the grammatical marking of new and unexpected information (Downing 2001; DeLancey 2001) including not only ‘surprise’ but also ‘disbelief’. According to Strauss (2005), Korean mirativity signals that “an immediate consciousness shift has taken place within the speaker. The shift is touched off by an external sensory and/or inferential trigger within the realm of the speaker’s direct experience which effects an instantaneous cognitive realization.” She suggested that there are three mirative markers in Korea: *ney*, *kwun*, *te*. In this dissertation, I only consider *te* as an evidential but we leave *ney* and *kwun* for future study.

2.2.2 The Direct Evidential: *te*

2.2.2.1 Previous Analyses of *te*

The Korean evidential *te* has been studied comprehensively and extensively but is still under controversy because it conveys the typical characteristics of evidentiality, i.e. directly acquired information, fused with tense but also additional semantic overtone such as first person effect or process of cognition (surprise or unexpectedness). As mentioned in 2.2.1., there are only a few previous works centering exclusively on evidentiality in Korean (K. Chung 2005; D. Lim 2010). Not surprisingly, while the preceding analyses offer an account of *te*: retrospective tense (H. Choi 1983), past imperfective (H. Lee 1991), a speaker’s witness (H. Sohn 1994) so on, they provide rather limited insights into the functions and meanings of the suffix *te*. Although there are interesting differences among the proposals made by these researchers, they seem to converge on two points: whether the suffix *te* is evidential or tense.

Nami -Nom school-to go-RT-Dcl

‘I saw Nami going to school.’

(Sohn 1994: p. 48)

H. Sohn (1994) dubbed *te* a retrospective mood marker. For him, the retrospective mood designates that the speaker has directly witnessed an event. Cinque (1999), following H. Sohn (1994), analyzed the suffix *te* in main clauses as evidentials. As illustrated in (14), we find no actual verb of visual perception in the Korean utterance but *te* is translated as ‘I saw’ which captures an evidential content, though H. Sohn (1994) did not use the term overtly. The claim that *te* must describe an event that a speaker witnessed is supported by (15).

(15) a. Ku tangsi Mina-ka ce cip-ey sal-te-la.

That time Mina-NOM that house-LOC live-Ev-DEC

‘[I saw] Mina was living in the house at that time.’

b. *Ku tangsi Shakespeare-ka ce cip-ey sal-te-la.

That time Shakespeare-NOM that house-LOC live-Ev-DEC

‘[I saw] Shakespeare was living in the house at that time.’

(K.Chung 2005: p. 121)

According K. Chung (2005), sentence (15a) indicates that ‘a speaker saw Mina living in the house in the past’, whereas (15b) is unacceptable because it is not possible for ‘a speaker to have seen Shakespeare living in the house’ in the real world. H. Lee (1991), on the other hand, analyzed *te* as a past imperfective marker. The suffix *te* refers to a certain time in the past and

thus it is not allowed in ‘here and now’ situations. However, H. Lee’s (1991) analysis of *te* as a past imperfective marker does not explain the undeniable interpretation of evidential content in (15a).

(16) a. Mina-ka kewul-ul kkay-te-la.

Mina-NOM mirror-ACC break-S.PAST-DEC

‘[I saw] Mina broke the mirror.’

b. Mina-ka kewul-ul kkay-ss-te-la.

Mina-NOM mirror-ACC break-PFCT-S.PAST-DEC

‘[I found out] Mina broke the mirror.’

c. Mina-ka kewul-ul kkay-keyss-te-la.

Mina-NOM mirror-ACC break-MOD-S.PAST-DEC

‘[I inferred] Mina would break the mirror.’

(K. Chung 2005: pp. 138-139)

K. Chung’s (2005) work attempted to offer possible explanations as to how a tense marker can get the interpretation of evidential content. In her analysis, the interpretation of evidential content comes not from *te* but from three types of non-terminal suffixes; \emptyset (direct evidential), *ess* (indirect evidential based on result state), and *keyss* (indirect evidential based on reasoning). Since no interpretation of evidential content arises without *te*, she argues that \emptyset , *ess*, and *keyss* are ambiguous: tenses without *te* and evidentials with *te*. She suggests that *te* is a ‘deictic past tense marker’, following Faller (2004), which is defined as a tense marker referring to a specific time as

well as a location. D. Lim (2010) convincingly rejected the analysis of K. Chung (2005).

According to him, K. Chung's (2005) analysis "needs to assume unwanted ambiguity in the tense/modal morphemes *ess* and *keyss*." In sum, it is necessary to explain why *ess* and *keyss* do not have the interpretation of evidential content in the absence of *te* before arguing that they are both an evidential and a TAM marker.

The motivation of K. Chung's (2005) ambiguity analysis is her typological assumption that "the very purpose of an evidential system is to distinguish direct and indirect evidence, and thus it is unlikely that both direct evidence and indirect evidence would be expressed by the same morpheme (K. Chung 2005: p. 134)." This is affected by Willett's (1988) taxonomy which predicts that no language can grammaticalize evidentiality that belongs to different mother nodes like direct and indirect. However, this assumption is not supported by cross-linguistic studies. According to Faller (2002), based on the observation by Oswalt (1986), the inferential evidential *qã* is used for clearly inferential evidence as well as for certain kinds of sensory evidence in (17).

(17) (Context: someone enters a house and perceives the smell of freshly baked bread)

cuhni· mu[?]ta-q^h

'Bread has been cooked.'

The evidential system of Kashaya consists of five types of evidentials: Performative, Factual-Visual, Auditory, Inferential and Quotative. In short, Kashaya has distinct evidentials for visual and auditory evidence, but uses the inferential for smell, taste and touch. By showing the example of Kashaya in (17), we support the argument that the distinction between direct evidence vs. inferential evidence can be marked by the same morphemes in contrast with K. Chung's (2005) prediction.

2.2.2.2 The Features of the Direct Evidential *te*

The Korean evidential *te* can be used to show that the speaker has direct evidence which had been acquired based on sensory information like visual, auditory and so on. Evidential *te* itself does not specify which type of evidence the speaker acquired in contrast with Washo and Oksapmin¹⁶. A similar system has been reported for all the Quechua languages and Amdo Tibetan (Aikhenvald 2004).

(18) Context: Yesterday the speaker saw Minswu and Miyeng enter a theater in front of it.

Now the speaker says this:

Minswu-ka ecey pam-ey Miyengi-hako kukcang-ey ka-te-la.

Minswu-Nom yesterday night-Loc Miyeng-Com theater-Loc go-Ev-Dcl

‘(I saw) Minswu and Miyeng went to a theater yesterday night.’

While the term, the Direct evidential seems to suffice for the Korean data in (18), it fails to account for the most crucial data because the Korean evidential *te* includes a range of information, from sensory information to internal experience.

(19) a. San-eyse paym-ul po-ass-ul ttay nemwu mwusep-te-la.

Mountain-Loc snake-Acc see-Ant-Adn moment really scared-Ev-Dcl

‘When I saw a snake in the mountain, [I noticed] I was scared.’

¹⁶ Washo has visual, auditory, inference evidentials in its system and Oksapmin has visual, non-visual and reported in its system. See Aikhenvald (2004) for details.

- b. Context: Yesterday the speaker saw Minswu ask for Miyeng to go to a theater on the street. Now the speaker says like this.

Minswu-ka nayil bam-ey Miyengi-hako kukcang-ey ka-keyss-te-la.

Minswu-Nom tomorrow night-Loc Miyeng -Com theater-Loc go-Mod-Ev-Dcl

‘(I infer that) Minswu and Miyeng would go to a theater tomorrow night.’

The direct evidential in Korean in (19a) is involved in the speaker’s internal experience which cannot be seen: emotion, physical state and knowledge. Moreover, the Korean evidential *te* seems to extend the range from sensory information to inference depending on which tense/modal it occurs with. In (19b), it shows the indirect inferential evidential reading. The speaker inferred it based on his observation that Minswu ask for Miyeng to go to a theater on the street. Faller (2002) faces the same problem with *-mi* in CQ.

(20) Paqarin Inés-qa Qusqu-ta-n ri-nqa.

Tomorrow Inés-top Cuzco-acc-mi go-3fut

p='Inés will go to Cuzco tomorrow.'

ev= Inés told speaker that she will go to Cuzco tomorrow

From the examples in (20), the evidential content of *-mi* is not based on sensory information but based on reportative information. Compare the CQ example in (20) with the Korean example in (19b). In both of them, the original Direct evidential extends its meaning when it occurs with the future tense¹⁷ (modal is overlapping with future tense in Korean). Interestingly enough, the

¹⁷ According to DeLancey (1990), the absence of direct in the future is natural phenomenon because a speaker cannot observe what has yet to occur in the future.

Korean evidential *te* seems to include a range from sensory information to inference whereas the CQ evidential *-mi* seems to include a range from sensory information to reportative information. As a result, it is hard to keep the analysis of *-mi* as a Direct evidential. Faller (2002) analyzes *-mi* as showing that “the speaker has the best possible source of information required for the type of the event described (Faller 2002: p. 18).” She explains that the speaker can pick the next best source of information when (s)he cannot use the best one. Though the question as to how the next best one can be decided is left, Faller’s proposal is attractive in that it avoids the restriction on ‘direct’ by widening the definition itself. Then can we apply the analysis of CQ to Korean Direct evidential? I believe that Faller’s proposal falls short of an explanation of Korean data.

As proposed by Strauss (2005) and K.Chung (2010), *te* conveys speaker’s surprise because what (s)he did not expect happened in addition to its evidential interpretation. Those interpretations stem from mirativity. Mirativity is the grammatical marking of new and unexpected information (Downing 2001; DeLancey 2001) including not only ‘surprise’ but also ‘disbelief’. K. Chung (2010) convincingly made her point that the mirative interpretation of *te* is “unexpected since direct evidentiality indicates the speaker’s witnessing of an event and should convey that the proposition in question is more reliable and trustworthy and hence the speaker feels certain about it.” In sum, in Korean, source of information is not directly linked to degree of certainty. Subsequently, Faller’s definition hardly explains the Korean evidential *te*. Inspired by Floyd (1999), I offer that *te* is a direct evidential but its content can result from external experience such as visual and auditory or internal experience such as the speaker’s sensations and emotions.

Evidentials often place a constraint on their speaker. “The choice between first hand and non-firsthand can depend on whether the event is perceived by the speaker or someone else (Aikhenvald 2004: p. 219).” According to K. Chung (2010), utterances with *te* are unacceptable

when the speaker is an active role. She explains that “a speaker’s own actions or appearances are usually not a target of his or her passive perception except for special cases.” On the other hand, utterances without evidentials do not show such constraints “because they do not involve the speaker’s passive perception, not exhibiting such restrictions.”

- (21) a. Younghee-ka/nay-ka nolay-lul pwul-ess-ta.
 younghee-Nom/I-Nom song-Acc sing-Ant-Dcl
 ‘Younghee/I sang a song.’
- b. Younghee-ka/??nay-ka nolay-lul pwule-te-la.
 younghee-Nom/I-Nom song-Acc sing-Ev-Dcl
 ‘[I saw] Younghee/I sang a song.’

While an utterance with declaratives in (21a) is fine regardless of the person of the subject, an utterance with *te* in (21b) is not acceptable with first-person subjects.

2.2.3 The Reportative Evidential: *tay*

2.2.3.1 Previous Analyses of *tay*

Comparatively little attention has been given to the final suffix *tay* until recently. As far as I know, H. Lee (1991), for the first time, proposed that *tay* is an indirect Reportative evidential which indicates that the source of the speaker’s information is hearsay in Korean. While studies about *te* center on the semantic interpretation of the morpheme, researchers who tried to explain *tay* had trouble drawing the line between evidentials and quotation expressions.

(22) a. Cwungdong-eyse cencayng-i ilena-ss-**ta-ko ha-n-ta**.

Middle.East-LOC war-NOM rise-PFCT-DEC-COMP do-PRES.IMPF-DEC

‘(They say) a war broke out in the Middle East.’

b. Cwungdong-eyse cencayng-i ilena-ss-**ta ha-n-ta**.

Middle.East-LOC war-NOM rise-PFCT-DEC do-PRES.IMPF-DEC

‘(They say) a war broke out in the Middle East.’

c. Cwungdong-eyse cencayng-i ilena-ss-**ta-n-ta**.

Middle.East-LOC war-NOM rise-PFCT-DEC-PRES.IMPF-DEC

‘(They say) a war broke out in the Middle East.’

(N. Kim 2000)

N. Kim (2000) proposed that there are three Reportative evidentials in Korean: *tako han*, *ta han* and *tan*. The form *tako han* in (22a) is a combination of the sentence-terminal suffix *ta* of the embedded clause, the complementizer *ko*, the contracted form *ha* of the embedding predicate *malha* ‘say’, and the present imperfective form *n*. He also explains that the form *ta han* in (22b) is derived from *tako han* by the deletion of the complementizer *ko*, and *tan* in (22c) is contracted form by deleting the verb *ha*.

Both K. Chung (2005) and D. Lim (2010) treated *tako han* and *ta han* as a quotation expression and addressed *tan* as a Reportative evidential.

(23) a. Bill-un Tom-i na-lul po-ass-ta-ko ha-ni?

Bill-Top Tom-Nom I-Acc see-Past-Decl-Comp do-Q

‘Did Bill say that Tom saw me?’

b. Tom-i na-lul po-ass-ta-ni?

Tom-Nom I-Acc drunk-Past-*ta*-Q!

‘Does Tom saw me?’

Implication: the speaker expects the addressee to answer whether Tom saw the speaker based on reportative evidence.

(D. Lim 2010)

When *tako han* or *ta han* occurs in a question, the question may ‘target’ the quotative embedding predicate but not propositional content. In particular, a speaker asks whether Bill says something or not, and not about whether Tom saw the speaker in (23a). On the other hand, the question in (23b) asks whether Tom saw the speaker, and not whether there is any evidential implication.

(24) a. Minswu-ka cwungtong-eyse cencayng-i ilena-ss-ta-ko ha-n-ta.

Minswu-Nom Middle.East-Loc war-Nom rise-Ant-Dcl-COMP do-Prs-Dcl

‘Minswu says a war broke out in the Middle East.’

b. ?? Minswu-ka cwungtong-eyse cencayng-i ilena-ss-ta-n-ta.

Minsu-NomMiddle.East-Loc war-Nom rise-Ant-Dcl-Prs-Dcl

‘Minswu a war broke out in the Middle East.

Example (24a) allows another subject, which is the source of the quoted sentence, whereas in example in (24b), its acceptability is degraded when the original speaker as the subject of the

embedding sentence occurs in it. This is strongly related to the observation by Mushin (2001) that a long indirect quotation structure represents a former speaking event; however, hearsay marker focuses on conveying the propositional content of the quoted message without referring to actual event of speaking. In addition, the former identifies the original speaker but the latter emphasizes the propositional content rather than the original speaker.

2.2.3.2 A Channel of Communication: *tay*

The Korean evidential *tay* can be used to show that a speaker has indirect evidence based on what an unspecified number of intervening speakers other than the speaker have said. As mentioned in 2.2.1., Willett (1988) proposed that Reportative evidentials can be further subgrouped into second-hand information, third-hand information, and folklore. Faller's (2002) research also supports this explanation in that subtypes of Reportative evidentials are "ordered according to the number of intervening speakers." As indicated in 2.2.3.1, the Korean evidential *tay* is used for hearsay in that the occurrence of the subject degrades the felicity of the utterances and it is not necessary to identify who reported the utterance. In sum, *tay* as a hearsay evidential can be used when the speaker has been directly told the information as well as when speaker has been told the information by an unspecified number of intervening speakers. Moreover, *tay* can be used even when the original speaker is already identified overtly in an utterance or covertly in the context.

(25) a. John-i Bill-ul ttayli-ess-ta-nta.

John-Nom Bill-Acc beat-Past-*ta*-Decl

'John beat Bill'

Implication: the speaker heard that John beat Bill from someone else.

b. John-i Bill-ul ttayli-ess-ta-pnita.

John-Nom Bill-Acc beat-Past-*ta*-Decl

‘John beat Bill’

Implication: the speaker heard that John beat Bill from someone else.

c. John-i Bill-ul ttayli-ess-ta-e (tay)

John-Nom Bill-Acc beat-Past-*ta*-Decl

‘John beat Bill’

Implication: the speaker heard that John beat Bill from someone else.

(D. Lim 2010: p. 50)

Recall that there are six types of sentence styles marked by terminal suffixes in Korean, which can show different degrees of formality or politeness. Although the utterances in (25) convey the same propositional content and their sentence type is *declarative* at the same time, different variants of Reportative evidentials can occur depending on sentence styles. Specifically, *tanta* in (25a) represents the plain style, *tapnita* in (25b) represents the deferential style and *tay* (the fusion of *ta-e* following D. Lim (2010)) in (25c) from someone else the intimate style. D. Lim’s (2010) interesting proposal is that non-terminal suffix *ta* is “the only Reportative evidential morpheme in Korean (D. Lim 2009)” considering the morphological categories of the Korean suffix system. The advantage of his proposal is that we can have one morpheme which can represent the Reportative evidential without considering the totally different level of meaning - sentence styles which are related to sociolinguistics. However, if we consider another feature of the terminal suffix in Korean - sentence types- it is hard to declare that *ta* is the only morpheme for Korean

Reportative evidentials. Recall K. Nam's (2001) observation that a group of final suffixes which can occur under the embedded clauses are regarded as sentence types in 2.1.4.

- (26) (scenario: In the kitchen, Mina's mother told Mina 'Mina, clean your brother's (his name Minswu) room' but Mina did not hear it clearly because she was playing a video game in her room and Mina asked her sister Minhee 'what did mom say?' Minhee answered---)

Minswu pang-lul chiwu-lay.

Minswu room-Acc clean-Ev

'Mother told you to clean your brother's room.'

Implication: I heard that Mother told you to clean Minswu's room.

I believe that *lay* in (26) is an evidential because a speaker said something based on what she had heard. In the scenario, the speaker is not requesting 'Mina to clean her brother's room' but only conveying the request by her mother. Hence, it is the preferred analysis that two terminal suffixes – *ela* and *e* – are combined and they are fused into the Reportative evidential, *lay*. As mentioned in 2.1.4., there exist four different sentence types of verbal suffixes such as declarative, imperative, interrogative, and propositive and we can show that the Reportative evidentials are compatible with four sentence types: *tay*, *lay*, *nyay* and *jay*. Now we can list the Korean Reportative evidentials.

	Declarative	Interrogative	Imperative	Propositive
Plain	tanta	nunyanta	ulanta	canta
Intimate	tay	nyay	lay	cay
Deferential	tapnita	nyapnita	ulapnita	capnita

Table 3: The list of Korean Reportative evidentials

The point is that each so called non-terminal suffix (the term by D. Lim (2010)) *ta* still plays the role of speech acts in all sentence types. Therefore, it is hasty if *ta* is treated as the only Reportative morpheme in Korean. Hereafter, I will focus on the analysis of the Reportative evidential *tay* assuming the rest of the suffixes in the table are a kind of variant of *tay*.

One of the most intriguing features of the Reportative evidential was presented in Faller (2002). It was observed that the Reportative evidential *-si* can be used by a speaker to convey what the original speaker had said without believing it to any degree. Based on this observation, Faller (2002) proposed that *-si* is denoted by the function from speech act of assertion to another speech act of presentation which takes another speech act as an argument and neutralizes the sincerity condition by revealing the procedure of encoding the information. McCready & Ogata's (2007) work also supports this explanation by offering that the Japanese Reportative evidential *soo-da* can be used when "the informational content is known by speakers to be false, in case the sentence is used as a correction." Let me show the Japanese example below in (27).

- (27) Jon-ga kuru soo-da kedo, hontoo-ni kuru-no ka
 John-Nom come SOO-DA but really-DAT come-NOM Q
 totemo shinjirarenai
 really can't believe

‘(They said) John would come, but I really don’t think he will.’

Following Faller (2002), K. Chung (2005) argues that the Korean Reportative evidentials also do not convey the meaning of a speech act of assertion.

(28) Taewoo-ka tambay-lul kkunh-ess-tay. Na-nun mit-ul swu eps-e.

Taewoo-Nom cigarette-Acc quit-Ant-Ev. I-Top believe-Adn DN neg-Dcl

‘(It is said) Taewoo quit smoking. I cannot believe this’

The example in (28) strongly supports Faller’s (2002; 2006) claim that a speaker is not necessarily committed to propositional content with the Reportative evidential. Therefore, we cannot find any inconsistency of the discourse when the initial propositional content is negated.

Evidentials often place a constraint on their speaker. For instance the Reportative evidential in Tucano occurs with first person only if the speaker cannot remember what had happened to them (Aikhenvald 2004). Following Aikhenvald (2004), D. Lim (2010) uses the phrase ‘first-person effects of Reportative evidentials,’ to refer to additional (non-evidential) implications of sentences when the first-person subject occurs in the sentence with the Reportative evidential.

(29) Nay-ka pesu-eyse ku namca pal-ul palp-ass-tay.

I-Nom bus-Loc the man foot-Acc step on-Ant-Ev

‘I stepped on his foot in the bus.’

Implication: The speaker did not recognize what (s)he did before

Reportative evidentials can only be used with the additional implication that the speaker does not

recognize his/her behaviors or feelings. For example, in (29), if a speaker does not notice what (s)he did before but heard from someone else that (s)he stepped on the other passenger, (s)he may utter (29), in which *tay* is used.

2.2.4 The Inference Evidential: *ci*

2.2.4.1 Previous Analyses of *ci*

There is a lack of agreement between the previous researchers in describing the characteristics of *ci*. The final suffix *ci* has been associated with a number of meanings in previous work such as “already having information” (K. Chang 1985), “suppositive” (H. Sohn 1999) and “Committal” (H. Lee 1999) and so on. Papafragou and Li (2002) assumed that *ci* is the evidential of “marking the certainty of a proposition” for their experiment but did not show any empirical evidence.

H. Lee (1999)’s study is one of the few studies which tried to explain complex behavior of suffix *ci*. He indicated that *ci* is used to express the speaker’s commitment to a proposition with various degrees of certainty from conjecture to assurance depending on contextual factors. His proposal is inspired by the prior literature. For example, Martin (1992) identifies *ci* as “suspective” by showing its low degree of certainty. In contrast to it, Y. Ko (1976) proposed that *ci* can be used in a context involving a high degree of certainty. Moreover, H. Lee (1999) proposed that *ci* is used to convey a speaker’s subjective attitude, stance or feeling and is associated with the function of the epistemic modality. Although his proposal captures a native speaker’s intuition, we need to clarify the criteria of the degree and the conditions of each degree. We will come back to this claim in the next section. If we agree with his proposal that *ci* is used to express the speaker’s commitment to a proposition with various degrees of certainty.

According to S. Kim (2007), *ci* can occur in three different positions in Korean. *ci* in (30a) is used as a connective by contrasting the first clause with the second one which shows the opposite

meaning of the previous clause. *Ci* in (30b) is used as a terminal suffix and *ci* in (30c) is used as the part of negation in Korean. In this thesis, however, it is important to understand whether (30b) differs from (30c) or not.

(30) a. Swumi-nun san-ul cohaha-ci pada-lul cohaha-ci anh-nun-ta.

Name-TOP mountain-Acc to like-ci sea-Acc to like-ci NEG-IMPV-DECL

‘Swumi likes the mountain, while she doesn’t like the sea.’

b. Swumi-nun san-ul cohaha-ci.

Name-TOP mountain-Acc to like-ci

‘Swumi likes the mountain.’

c. Swumi-nun pada-lul cohaha-ci anh-nun-ta.

Name-TOP sea-Acc like-ci NEG-IMPV-DECL

‘Swumi doesn’t like the sea.’

(S. Kim 2007:p. 1)

The claim that *ci* in (30b) and (30c) is identical may lead us to the conclusion that *ci* is not an evidential or that it is a special type of evidential. It is well known that the evidential content always take scope over negation (De Haan 1999; Faller 2002; Izvorski 1997; Matthewson et al. 2007), however the evidential content, if it exists in (30c), is clearly negated.

Rhee (2008) offered the same proposal based on different approaches. As far as I understand, Lim (1978) argued that *ci* in (30c) is the sentence ender and it is combined with the so called negation verb, *ani ha* (its contracted form is *anh*) is attached to the whole clause under the

sentence ender *ci*. However, this line of approach falls short of the explanation of some data in Korean.

(31) a. Swumi-nun san-ul cohaha-keyss-ci.

Swumi-Top mountain-Acc to like-Mod-ci

‘Swumi likes the mountain.’

b. *Swumi-nun pada-lul cohaha-keyss-ci anh-nun-ta.

Swumi-TOP mountain-Acc like-Mod-ci Neg-Prs-Dcl

‘Swumi likes the mountain while she doesn’t like the sea.’

In (31), the modal marker *keyss* is inserted between verb stem and *ci* from (31a) and (31b); however, the example of (31a) is grammatical and example of (31b) is not. Recall the suffix system in 2.1.1. A verbal stem always occur with a terminal suffix (sentence ender) and arbitrarily takes non-terminal suffixes like TAM markers. If *ci* both in (31a) and (31b) is a terminal suffix, it is expected that they allow TAM markers to occur in their slot. We can find another piece of evidence that *ci* in the negation is not a terminal suffix in Hagstrom (1996). He suggested that *ci* is a nominalizer because *ci* can be followed by case markers similar to normal nominal elements.

(32) John-i ppang-ul mek-ci-lul ani ha-ess-ta

John-NOM bread-ACC eat-CI-ACC NEG do-PAST-DECL

‘John did not eat the bread’

(Hagstrom 1996: p. 2)

The claim that *ci* in negation is a sentence ender is clearly vulnerable to the objection that making use of a nominalizer for sentence ender does not seem reasonable. As indicated in Hagstrom (1996), we assume that *ci* in negation is a nominalizer.

2.2.4.2 The Gradient of *ci* in the Context

The Korean evidential *ci* can be used to show that a speaker has an inference or deduction based on facts other than on a direct observation. This evidential content can be exploited in order to present the proposition as inferred from some other proposition in the preceding or following context, or from some fact which is part of the contextually shared knowledge of the participants. The speaker may also keep the premises of his/her inference private. Squartini (2008) proposed a gradient whose opposite poles are represented by circumstantial inferences and conjectures and the overlapping area are represented by generic inferences. Based on Squartini's observation, I will try to find the range of the Inference evidential under the gradient.

Following Squartini (2008), Cornillie (2009) offered that there are three types of inference evidentials: circumstantial, generic, and conjectured inferences. In circumstantial inferences, 'mental process is based on antecedent in the context or external sensory evidence' (Squartini 2008). Consider the example from Cornillie (2009).

(33) There is a wounded dog lying on the other side of the street. It must be pain.

Let us look at *ci* in Korean in the similar context.

(34) Seccok hanul-ey mekkwulum-i canttuk kki-ess-ta. pi-ka o-ci.

West sky-Loc dark cloud-Nom a lot exist-Ant-Dcl rain-Nom come-Ev

‘There are a lot of clouds in the western sky. It must be raining.’

In generic inferences, the mental process is based on previous personal experience or general world knowledge (Squartini 2008).

(35) 1 teha-ki 1-un 2-ci.

1 plus-Com 1-Top 2-Ev

‘1 plus 1 equals 4.’

The last type is the pure conjecture inference. The Italian future in (36) is grammatical in contexts even with no evidence whereas Italian *dovere* + *infinitive* is not acceptable in the same context.

(36) a. [Suonano alla porta] Non aspettavo nessuno; sarà Gianni.

[The bell rings] I was not expecting anybody. It might be (be: fut) G.

b.??[Suonano alla porta] Non aspettavo nessuno; deve essere Gianni.

[The bell rings] I was not expecting anybody. It must be G.

However, the utterance with the Korean inference evidential is not acceptable in the Korean translation of (36) in (37).

(37) Context: The bell is ringing.

Cenхва-lul ha-l salam-i eps-canha. Younghee-ci.

Telephone-Acc call-Rel person-Nom not-believe. Younghee-Ev.

‘I am not expecting anybody. (I am sure) it is Younghee.’

Squartini (2008) offered an interpretation of the relevant functional domains of inferences as a gradient whose opposite poles are represented by circumstantial inferences and conjectures and the overlapping area are represented by generic inferences.

(38) Circumstantial inferences — Generic inferences — Conjectures

<The inferential gradient>

The crucial insight that we draw from Squartini’s (2008) proposal is that the opposite poles in Italian are “represented as nonoverlapping functions.” Based on this, we can predict that if any inferential evidential shows circumstantial inferences then it also represents generic inferences; however, it should not show conjectures. This is the pattern of the Korean inference evidential *ci* above. This observation seems to argue against the proposal by Martin (1992) and H. Lee (1999) that *ci* can show a low degree of certainty (Conjectures).

Ci is one of the sentence-terminal suffixes in Korean. As indicated in 2.1.4, six types of sentence styles can be marked by terminal suffixes, which can be simultaneously classified by sentence types. S. Kim (2007) showed that *ci* is used to express the ‘intimate’ and ‘polite’ (when combined with *yo*, the polite marker) level as sentence styles and can be used in various sentence types such as declarative, imperative, interrogative, and propositive. H. Lee (1999) emphasized that *ci* as an interrogatives shows that “the speaker is asking for confirmation or is seeking an agreement from the addressee about what (s)he believes in.” Many researchers agree that it can be translated as a tag question in English (H.Sohn 1994; Rhee 2008).

(39) Kyelhonha-nikka hayngpokha-ci?

marry-Reas be.happy-End?

'You are happy because you got married, right?'

(Rhee 2008)

Interestingly enough, constant polarity tag questions (CPTS) in English shows common characteristics with evidential *ci* as interrogatives.

(40) a. You have seen them, **have you**?

b. **Apparently** you have seen them.

c. You **must** have seen them.

(Kimps & Davidse 2008)

Following McGregor (1997), Kimps (2007) argued that “tags not only indicate which response the speaker expects, but also modify the way in which the host clause relates to presuppositions, expectations, and attitudes of speaker and hearer”. In (40), roughly speaking, all examples show evidentiality strategies, where other categories have evidential qualification. In (40a), the tag presupposes its propositional content from the host clause and changes the point of view anchoring of interlocutors. In particular, a speaker’s evaluation of the encoding information extends to the hearer’s evaluation of encoding information. This is similar to but different from interrogative flip in section 3.1.3. We will return to this issue in chapter 3.

2.3 The Degree of Certainty and Boundary Tones

It seems clear that the degree of certainty is correlated to the source of information (de Haan 1998; Faller 2002; Davis et al. 2007). However, in chapter 1, I argue that the source of information does not correspond in the simple way to a speaker's degree of certainty in Korean because a speaker's degree of certainty is sensitive to a context or the interaction between evidentials and other categories such as epistemic modality and tense. I did not demonstrate how the previous context or TAM markers can affect a speaker's attitude. To elaborate this, I give a case study of the prosody of Korean evidentials.

I briefly introduced the presuppositional theory by van der Sandt (1992) and its extended theory by Asher and Lascarides (1998) to explain the evidentiality of Korean in Chapter 1. The insight in the experiment is motivated by van der Sandt (1992): all presuppositions are anaphoric. Specifically, this experiment is conducted to examine anaphoric relations between the source and the evidential. If appropriate information source exists for the evidential in context then the resolution is done by binding the presuppositional expressions (evidentials) and their antecedents (the source of information). Moreover, it is well known that the resolution of anaphoric expressions can affect the tones of sentence types (Ladd 1981; Nilsenová 2006). According to Ladd (1981), sentence types are signaled by high tone level at the end of incomplete or unresolved utterances. On the other hand, sentence types are signaled by low tone level at the end of complete utterances¹⁸.

Relatedly, it should be noted that interaction between Korean evidentials and other suffixes can affect a speaker's degree of certainty. K. Chung (2005) and J. Lee (2011) pay attention to the

¹⁸ According to Nilsenová (2006), this observation is strongly related to the universality of intonation meaning. The main idea is that languages share some universal features with regard to intonation resulting from physiological effects on intonation production. For example, sustained or reduced muscular tension reflects the speaker's intention either to continue or to stop (Ladd 1981).

Direct evidential *te* because *te* in the absence of other tense and modal markers like *ess* and *keyss* conveys a Direct evidential interpretation. In contrast, they commonly demonstrate that the Direct evidential *te* combined with tense and modal markers conveys an Inference evidential interpretation. Considering the evidential scales in the cross-linguistic studies¹⁹, the Direct evidential shows higher degree of certainty than the Inference evidential. In addition, as pointed out in 2.2.4, *ci* is used to express the speaker's a low degree of certainty when it always combines with the Korean modal/future marker *keyss*. However, as far as I know, the observations above have never been examined with empirical data.

I analyze the intonation phrase (IP) of utterances featuring Korean evidentials using the autosegmental-metrical model of intonational phonology developed by Pierrehumbert and her colleagues (Pierrehumbert 1980; Beckman & Pierrehumbert 1986; Pierrehumbert & Beckman 1988)²⁰. It has been argued that Korean boundary tones can coincide with sentence-terminal suffixes (S. Jun 2000; M. Park 2003). While the previous Korean literature provides a great deal of descriptive works on the morpho-syntactic features of Korean sentence-terminal suffixes (K. Nam 2001; H. Sohn 1999; C. Suh 1996 among others) there are few studies considering the relation between the patterns of the boundary tones and Korean suffixes (M. Park 2003). Korean suffixes, especially the sentence-terminal ones, provide information on speech acts as well as a speaker's attitude or stance toward the propositional content of the utterance and toward the hearer. Thus, the domain of these verbal suffixes is equal to or larger than that of a verbal phrase, since the boundary tones contribute information about the intonational phrase (IP) as a whole (Pierrehumbert & Hirschberg 1990). My assumption is that Korean evidentials under the

¹⁹ Here I will not consider mirativity of *te* for the purpose of convenience.

²⁰ A series of studies built a mechanism of underlying representations of intonation and rules which can link underlying representations into a phonetic realization in the F0 contour. Based on the notion of intonational phonology, S. Jun (1993; 2000) made remarkable achievements with regard to Korean. This section is indebted to her and her colleagues.

subsystem of Korean suffix can affect IP of utterances, inspired by M. Park's (2003) study.

2.3.1 Background and Motivation

2.3.1.1 K-ToBI

K-ToBI (Korean Tones and Break Indices) is a set of intonational transcription conventions for Korean (S. Jun 2000)²¹. K-ToBI assumes a close relationship to a hierarchical model of abstract intonational categories and their correlation to the functions, which is called an intonational phonology. A K-ToBI revised the original system²² by dividing five parallel tiers: the word tier, the phonological tone tier, the phonetic tone tier, the break index tier, and the miscellaneous tier.

The original ToBI labels basic tone levels in terms of Low (L), High (H) or their combinations. Two types of tones are marked in the tone tier: pitch events associated with phrasal tones and pitch events associated with pitch accents. Pitch accents are distinguished from phrasal tones by the star diacritic (*) next to L or H. Phrasal tones are further divided into phrasal accents that mark the end of an intermediate phrase, and boundary tones that mark the end of an intonational phrase. K-ToBI adopted basic tone levels like H and L from ToBI. S. Jun (1993) suggested that the highest prosodic unit marked by intonation is an Intonation Phrase (IP)²³ which is marked by boundary tone (%) and features final lengthening. An Accentual Phrase (AP)²⁴ is

²¹ K-ToBI is based on the design principles of the original English ToBI (Pierrehumbert 1980; Beckman and Pierrehumbert 1986) and on J-ToBI (Pierrehumbert & Beckman, 1988), the Japanese ToBI system.

²² A ToBI transcription for an utterance consists of four separate tiers: the orthographic tier, the tone tier, the break index tier, and the miscellaneous tier.

²³ The Intonational Phrase (IP) is the highest prosodic unit in the hierarchy. It is often followed by a pause and illustrated by final lengthening (S. Jun, 1993; 2004). It has been attested that there are nine IP boundary tones in Korean (L%, H%, LH%, HL%, LHL%, HLH%, LHLH%, HLHL%, LHLHL%). These boundary tones are correlated to various semantic and pragmatic meanings (S. Jun, 1993; M. Park, 2003).

²⁴ The Accentual Phrase (AP) is lower in the hierarchy than the IP. The default tonal pattern of the AP is THLH (Tone (L or H) – H – L – H). The AP is never followed by a pause (S. Jun, 1993) and the existence of final lengthening in the AP is controversial (S. Jun, 1993, 1995). When the AP

marked by phrasal tone, a unit smaller than an IP and larger than a phonological word. IP and AP are two prosodic phrases in S. Jun's (1993) model. The Word and Syllable levels are lower in the hierarchy than the AP and are not defined by tonal patterns. Hence, the prosodic hierarchy is composed of four prosodic levels: Intonation Phrase (IP), Accentual Phrase (AP), Phonological words and Syllables as shown in Figure 2 below.

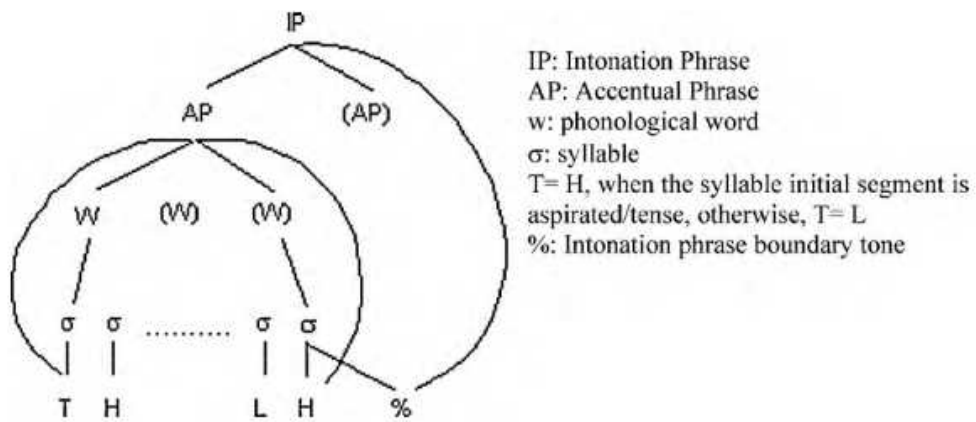


Figure 2: Intonational structure of Seoul dialect (reprinted from Jun 1993)

2.3.1.2 Korean Prosodic Boundary Tones

The present experiment is a pioneering study of Korean evidentiality with regard to tone and intonation. I try to reveal the relationship between evidentials and the prosodic boundary tones used with them as far as I know for the first time. However, the idea that boundary tones may be affected by evidentials is motivated by M. Park's (2003) study²⁵. She offered some important assumptions related to the current work. According to her, Korean suffixes present "information

overlaps with the end of an IP, the AP-final H tone is replaced by one of the IP boundary tones.

²⁵ Although the current study is indebted to M. Park's (2003) work, I will approach the data from a different perspective. Specifically, her study aims to find a complete inventory of Korean prosodic boundary tones and their pragmatic uses, whereas my approach will focus on the frequency of boundary tones and try to reveal their tendencies.

on speech acts as well as a speaker's attitude or stance toward the propositional content of the sentence and toward the hearer (M. Park 2003: p. 27).” Thus, the domain of verbal suffixes is comparable to or larger than that of verbal phrases because the boundary tones are correlated to the IP as a whole (Pierrehumbert & Hirschberg 1990). Based on this assumption, we can consistently measure the last vowel syllable as a boundary tone.

Another of her insightful proposals is that the basic meaning of each boundary tone is carried by the level of the final tone: e.g., H%, LH% and HLH%. Each boundary tone shows different connotations, however their core meaning is decided by H%. As a result, any boundary tone with final H% can be altered without a significant change in meaning. Considering this observation, she divided boundary tones into two groups as below.

(41) Two tonal groups based on the final tone type:

- a. Final L: L%, HL%, LHL%, HLHL%, LHLHL%, etc.
- b. Final H: H%, LH%, HLH%, LHLH%, etc.

(Park 2003: p. 38)

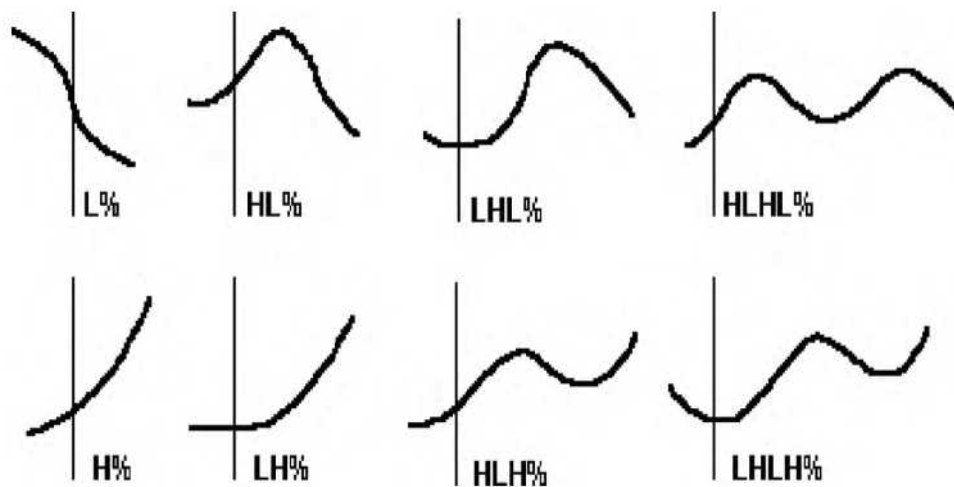


Figure 3: Schematic F0 contours of 8 boundary tones of Korean (reprinted from S. Jun 2000)

Lastly and most importantly, the basic meaning of each boundary tone is determined by the speaker's degree of certainty toward the propositional content of the utterance. In particular, a boundary tone is realized as a final H when the speaker's degree of certainty toward the propositional content of the utterance is relatively low, whereas a boundary tone is realized as a final L when the speaker's degree of certainty toward the propositional content of the utterance is relatively high. Based on this observation, I assume that speakers use either final H or final L to reflect the relationship between encoding information from evidentials and the speaker's cognitive state²⁶.

2.3.2 Experiments

²⁶ Rees (2007), following Asher & Lascarides (2003), convincingly proposes that intonation reflects speaker's cognitive state which is related to the speaker's beliefs or intentions. Therefore, according to him, intonation indirectly contributes information that can be used to resolve the rhetorical relations of an utterance to a discourse.

2.3.2.1 Participants

Korean has many regional dialects. The purpose of the experiment in this section is to analyze the intonation phrase (IP) of utterances featuring Korean evidentials. Research based on spoken data should focus on one specific dialect to keep the quality of data consistent. I collected data of Seoul Korean²⁷, which is the official dialect of South Korea. A total of 8 speakers²⁸ of the Seoul dialect participated in this experiment. Seoul dialect speakers were recorded in the city of Seoul, South Korea. All speakers were born and raised in Seoul. The analysis is based on recordings collected from 4 male and 4 female speakers who ranged between 22 and 28 years of age. In terms of level of education, the participants reported enrollment in university.

2.3.2.2 Data and Methodology

Participants in a quiet room were asked to read aloud sentences on PowerPoint slides as if they were talking to someone in a daily conversation. A total of 188 sentences have been compiled for this data set. The slides consist of stimuli (Direct, Reportative or Inference) and sentences which include evidentials, declaratives or TAM markers. They are pseudo-randomized and viewed on the screen of a laptop computer. To avoid subjects' distraction, an experimenter clicks a mouse button connected to a computer to proceed to the next slide. The experiments recorded in this project fall into three main sections. Participants have 3 minutes rest at the end of each section.

This experiment falls into three sections according to the different evidential types: Direct, Inference and Reportative evidentials. The first section deals with the Direct evidential. At the

²⁷ It is hard to define a Seoul dialect speaker because a majority of the population of Seoul migrated from other provinces of Korea. In this experiment, if the subject was born in Seoul and has lived his or her whole life in Seoul, the subject is regarded as a Seoul dialect speaker.

²⁸ All participants were selected from group of volunteers at Yonsei University who completed a simple background questionnaire. They could be enlisted as participants for the experiment if they have lived their whole lives in Seoul. They were given priority if at least one of their parents were Seoul dialect speakers or if they cannot speak any foreign language.

beginning of the experiment a picture (e.g. a girl is drinking coffee.) on the upper side of a slide was presented on the screen of a laptop computer. One second later a sentence pops up on the same slide under the picture. These slides can be subdivided by three types: a picture and a sentence matched, a picture and a sentence mismatched (dummy slides) and a geometric pattern picture and a sentence (no previous context) were presented. The participants' task is to see a picture and read aloud a sentence including evidentials, declaratives or TAM markers.

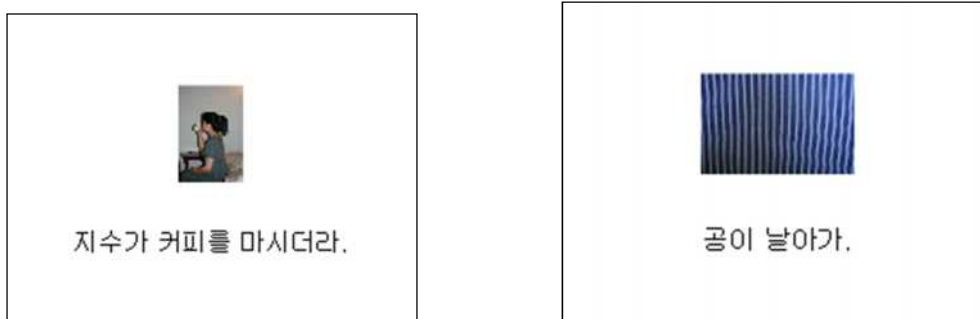


Figure 4: Examples of slides of section 1

In the second section for Reportative evidentials, participants either can or cannot hear the digitized audio (e.g. A: Ciswu is drinking a lot of coffee. B: She must be sleepy) of the voice of native Korean speakers before a new slide is presented. A sentence pops up on the slide and participants read the sentence aloud in the same way.

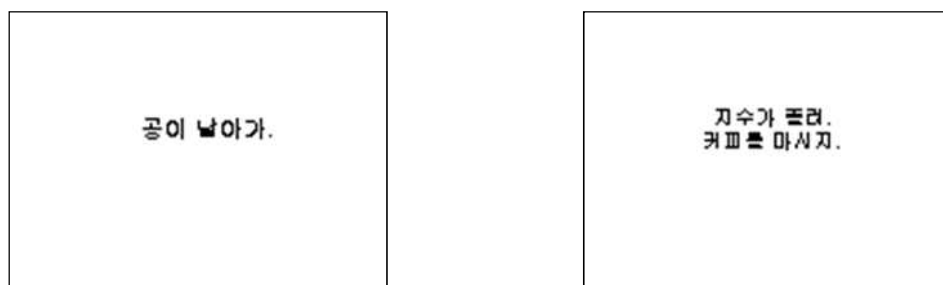


Figure 5: Examples of slides of section 3

In the last section, which involves inference evidentials, participants read sentences aloud when a new slide is presented. There are two types of slides here. One is an ‘out of the blue’ setting. A target sentence pops up with no context and participants read a sentence aloud. Another type is designed to show the relation between context and target sentences. Each target sentence is preceded by another sentence playing the role of context for the slide and participants read aloud two sentences in the same way. All speech signals are recorded using a Labtec, Verse 504 boom microphone and transferred to the computer at a 22 kHz sampling rate.

2.3.2.3 Analysis

Among the recorded utterances, all those except for utterances with dummy stimuli were digitized. Analysis of the recordings was performed with the software program *Praat* (Boersma & Weenink 2010) using an autocorrelation method to extract the fundamental frequency (F0) contour. The pitch contour of IP is estimated by examining the F0 pitch track along with the waveform and spectrogram and transcribed using K-ToBI labeling conventions (S. Jun 2000).

The first step of the analysis is to locate IP boundaries of utterances in which a linguistic expression of interest occurs and count the number of IPs in each data set. Each data set has 384

IPs and the total number of IPs is 1152. Furthermore, each pitch track of an IP is annotated with intonational patterns of the IP to examine the frequency of the tonal patterns. As mentioned in 2.3.1.2, according to S. Jun (2000), it has been reported that there are nine IP boundary tones in Korean (L%, H%, LH%, HL%, LHL%, HLH%, LHLH%, HLHL%, LHLHL%). In the experiment, I found six IP boundary tones among them (L%, H%, LH%, HL%, LHL%, HLH%). Figure 6 below illustrates the spectrograms, pitch tracks and waveforms of IP boundary tones.

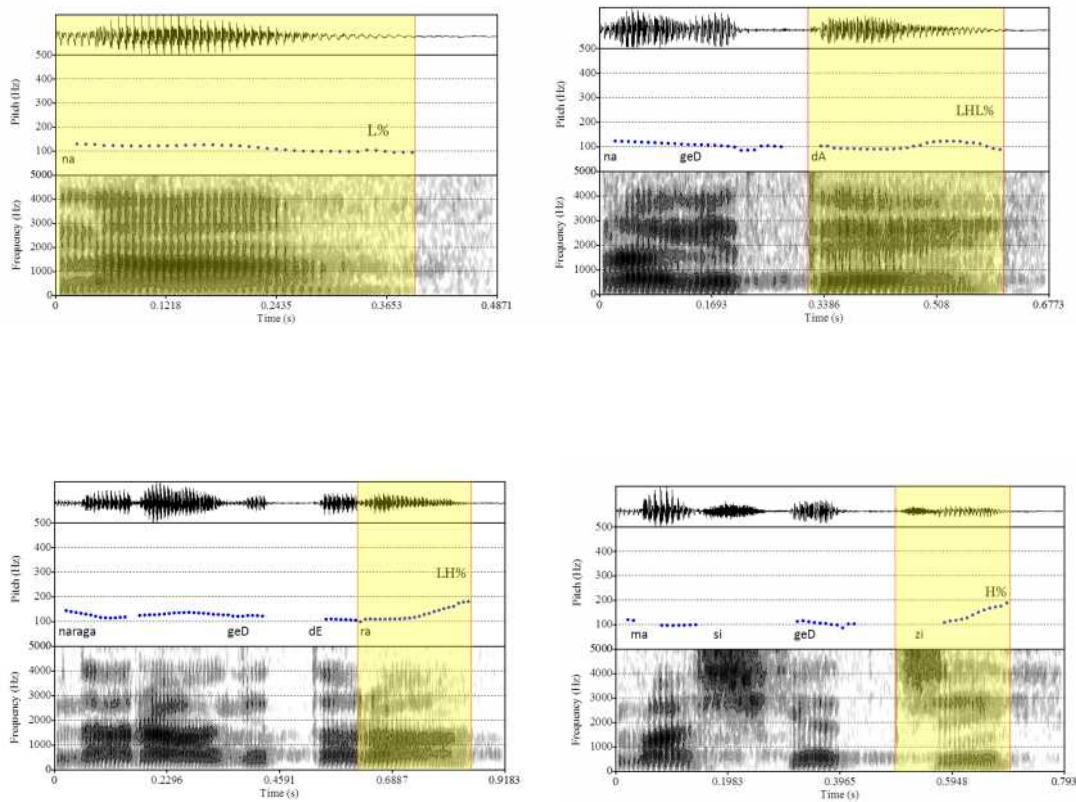


Figure 6: Annotations of IP boundary tones²⁹

2.3.3 IP Tone Pattern Frequency: Evidentials vs. Declaratives

As mentioned early in this chapter, I propose that Korean evidential system falls into the B1

²⁹ Sang-hoon Park technically helped me to build up four figures here.

system of Aikhenvald (2004). Korean is an evidential language with all three evidential types: Direct, Inference, and Reportative evidentials. While IP tones of Korean evidentials can be affected by the resolution of source of information or TAM markers, the suffix *e/a* (for the declarative with the intimate style used mainly in daily conversation), according to H. Lee (1991; 1993), is used to convey information assumed to be new to the addressee. Based on this assumption, we can predict that IP tones of evidentials are more sensitive to the existence of stimuli or TAM markers than IP tones of declaratives. This is the first prediction of the experiment. To verify it, I will compare the frequency of IP tones between the utterances with the evidentials and those with the declaratives in the current subsection. Let's look at the result of the analyses below in Table 4 and Table 5.

IP tone patterns	n=576	%
L	260	45.1
HL	77	13.4
LHL	38	6.6
H	84	14.6
LH	107	18.6
HLH	1	0.2
X?% ³⁰	9	1.6

Table 4: The frequency of IP intonation patterns of evidentials

³⁰ Jun (2000) used X?% for the case of uncertain tonal events of IP.

IP tone patterns	N=576	%
L	369	64.1
HL	9	1.6
LHL	79	13.7
H	8	1.4
LH	103	17.9
HLH	1	0.2
X?%	7	1.2

Table 5: The frequency of IP intonation patterns of declaratives

Among 1152 IP tones, 576 IP tones are accompanied with one of the three types of Korean evidentials and 576 IP tones are accompanied with the suffix *e/a*, the informal style of intimate declaratives. In table 4, out of 576 IP tones of utterances with evidentials, 65.1% of IP tones end with L and 33.3% of IP tones end with H. On the other hand, in table 5, 79.3% of IP tones of utterances with the declaratives ended with L and 19.4% of IP tones of utterances with the declaratives end with H. The tables above illustrate the intonation pattern frequency of IPs. As mentioned earlier, M. Park (2003) argued that the basic meaning of each boundary tone is determined by the speaker's degree of certainty toward the propositional content of the utterance. The result shows that Korean evidentials are more easily correlated to uncertainty than Korean suffix *e/a*; however a deeper level of analysis is needed to reveal which factor affected the result.

2.3.4 IP Tone Pattern Frequency: the Direct Evidential

As mentioned in section 2.2.2, the evidential *te* can be used to show that the speaker has direct evidence which had been acquired based on sensory input such as visual, auditory information and so on. The evidential *te* itself does not specify the type of information source which a speaker

acquired in the past time. However for the convenience of the experiment we used visual information as stimuli. Based on the assumption that Korean evidentials are referring expressions, I compare two groups of utterances with *te*: one group does take visual information as stimuli and another group does not take any stimuli in context. It is predicted that the former group will show more strong certainty than the latter because the resolution is done by binding the presuppositional expressions (evidentials) and their antecedents (the source of information).

In the first section of the analyses, 96 IP tones with visual information and 96 IP tones without visual information were analyzed. In the former group, 65.7 % of IP tones of utterances end with L and 32.3 % of IP tones of utterances end with H. On the other hand, in the latter group, 79.2 % of IP tones of utterances end with L and 18.8 % of IP tones of utterances end with H.

IP tone patterns	Encoding of source		No encoding of source	
	n=96	%	n=96	%
L	28	29.2	36	37.5
HL	33	34.4	40	41.7
LHL	2	2.1	0	0
H	22	22.9	14	14.6
LH	9	9.4	4	4.2
HLH	0	0	0	0
X?%	2	2.1	2	2.1

Table 6: IP intonation patterns of *te* depending on encoding of source

The materials for this experiment are also designed to compare utterances featuring evidentials with the TAM markers. Recall that the Korean tense system has two tenses: *ess* for anterior and \emptyset for non-anterior. Anterior *ess* locates a situation time simultaneously with or prior to reference time and non-anterior \emptyset locates a situation time with reference time. I also showed that future

tense is very close to being part of the modal system and that a modal expression is inherently related to uncertainty in 2.1.3. According to K. Chung (2005) and J. Lee (2011), the Direct evidential *te* combined with tense and modal markers like *ess* and *keyss* conveys an Inference evidential interpretation. As a result, the Direct evidential combined with TAM markers shows lower degree of certainty because the Direct evidential cross-linguistically shows higher degree of certainty than the Inference evidential. I believe that K. Chung (2005) and J. Lee (2011)'s proposal is descriptively adequate and also captures the native speaker's intuition, however their proposal have never been examined with empirical data. To examine the influence of TAM markers, I compare three groups of utterances with *te* combining with an anterior, non-anterior and modality.

IP tone patterns	Anterior		Non-anterior		Modality	
	n=64	%	n=64	%	n=64	%
L	16	25	26	40.6	22	34.4
HL	28	43.8	25	39.1	20	31.3
LHL	0	0	1	1.6	1	1.6
H	15	23.4	6	9.4	15	23.4
LH	5	7.8	4	6.3	4	6.3
HLH	0	0	0	0	0	0
X?%	0	0	2	3.1	2	3.1

Table 7: IP intonation patterns of *te* depending on TAM

In Table 7, the first group is composed of 64 IP tones of utterances featuring the Direct evidential with the anterior tense *ess*. The second group is composed of 64 IP tones of utterances featuring the Direct evidential with the non-anterior tense Ø. The third group is composed of 64 IP tones of

utterances featuring the Direct evidential with the modal *keyss*. In the first group, 68.8 % of IP tones of utterances end with L and 31.2 % of IP tones of utterances end with H. In the second group, 81.3 % of IP tones of utterances end with L and 15.7 % of IP tones of utterances end with H. In the third group, 67.3 % of IP tones of utterances end with L and 29.7 % of IP tones of utterances end with H.

2.3.5 IP Tone Pattern Frequency: the Reportative Evidential

The Korean evidential *tay* can be used to show that a speaker has indirect evidence based on what an unspecified number of intervening speakers other than the current speaker have told. In this experiment, to capture the evidential content of ‘hearsay’, a conversation is used as a stimulus. The basic procedure of this analysis is the same as that with *te*. I will simply describe the result. According to the hypothesis that *tay* is an anaphoric expression, I compare two groups of utterances with *tay*: one group takes a stimulus and the other group does not take a conversation as a stimulus. It is predicted that the former group will show higher certainty than the latter. In this experiment, 96 IP tones with a stimulus and 96 IP tones without any antecedent are analyzed. In the former group, 68.7 % of the IP tones of utterances end with L and 29.2 % of the IP tones of utterances end with H. On the other hand, in the latter group, 61.5 % of the IP tones of utterances end with L and 37.5 % of the IP tones of utterances end with H.

IP tone patterns	Encoding of source		No encoding of source	
	n=96	%	n=96	%
L	46	47.9	42	43.8
HL	1	1	1	1
LHL	19	19.8	16	16.7
H	2	2.1	2	2.1
LH	26	27.1	33	34.4
HLH	0	0	1	1
X?%	2	2.1	1	1

Table 8: IP intonation patterns of *tay* depending on encoding of source

This section of the experiment was also designed to compare utterances featuring the Reportative evidential with three different TAM markers: *ess*, *Ø*, *keyss*. The result of analysis is shown below.

IP tone patterns	Anterior		Non-anterior		Modality	
	n=64	%	n=64	%	n=64	%
L	33	51.6	24	37.5	31	48.4
HL	1	1.6	1	1.6	0	0
LHL	7	10.9	15	23.4	13	20.3
H	0	0	1	1.6	3	4.7
LH	19	29.7	23	35.9	17	26.6
HLH	1	1.6	0	0	0	0
X?%	3	4.7	0	0	0	0

Table 9: IP intonation patterns of *tay* depending on TAM

In Table 9, the first group is composed of 64 IP tones of utterances featuring the Reportative evidential with the anterior tense *ess*, the non-anterior tense *Ø* and the modal *keyss* each. In the

first group, 64.1 % of IP tones of utterances end with L and 31.2 % of IP tones of utterances end with H. In the second group, 62.5 % of IP tones of utterances end with L and 37.5 % of IP tones of utterances end with H. In the third group, 68.7 % of IP tones of utterances end with L and 31.3 % of IP tones of utterances end with H.

2.3.6 IP Tone Pattern Frequency: The Inference Evidential

Korean evidential *ci* can be used to show that a speaker has made an inference or deduction based on facts other than on direct observation. This evidential content can be exploited in order to present the proposition as inferred from some other proposition in the preceding or following context. Again, the basic procedure of analysis is same as that for *te* and *tay*. I will simply describe the result. I compared two groups of utterances with *ci*: one group takes a previous discourse as stimulus and the other group does not take a previous discourse as stimulus.

Accordingly, it is predicted that the former group will show a higher certainty than the latter. In this section of the experiment, 96 IP tones with previous discourse for use in inference and 96 IP tones without previous discourse are analyzed. In the former group, 62.5 % of IP tones of utterances end with L and 36.5 % of IP tones of utterances end with H. On the other hand, in the latter group, 53 % of IP tones of utterances end with L and 45.7 % of IP tones of utterances end with H.

	Encoding of source		No encoding of source	
IP tone patterns	n=96	%	n=96	%
L	59	61.5	49	51
HL	1	1	1	1
LHL	0	0	1	1
H	17	17.7	27	28
LH	18	18.8	17	17.7
HLH	0	0	0	0
X?%	1	1	1	1

Table 10: IP intonation patterns of *ci* depending on encoding of source

This section of the experiment was also designed to compare utterances featuring the Inference evidential with three different TAM markers: *ess*, *Ø*, *keyss*. In 2.2.4, I pointed out that *ci* is used to express the speaker's a low degree of certainty when it combines with the Korean modal/future marker *keyss*. The result of analysis is shown below.

	Anterior		Non-anterior		Modality	
IP tone patterns	n=64	%	n=64	%	n=64	%
L	40	62.5	41	64.1	27	42.2
HL	0	0	1	1.6	1	1.6
LHL	1	1.6	0	0	0	0
H	7	10.9	6	9.4	31	48.4
LH	15	23.4	15	23.4	5	7.8
HLH	0	0	0	0	0	0
X?%	1	1.6	1	1.6	0	0

Table 11: IP intonation patterns of *ci* depending on TAM

In Table 11, the first group is composed of 64 IP tones of utterances featuring the Inference evidential with the anterior tense *ess*, the non-anterior tense \emptyset and the modal *keyss* respectively. In the first group, 64.1 % of IP tones of utterances end with L and 34.3 % of IP tones of utterances end with H. In the second group, 65.7 % of IP tones of utterances end with L and 32.8 % of IP tones of utterances end with H. In the third group, 43.8 % of IP tones of utterances end with L and 56.2 % of IP tones of utterances end with H.

2.3.7 Discussion

With regard to Korean evidentiality, I consider two factors which can affect the speaker's degree of certainty: source of information and TAM markers. Based on the proposal by van der Sandt's (1992) that all presuppositions are anaphoric, this experiment is designed to examine anaphoric relations between the source and the evidential. If appropriate information source exists for the evidential in context then the resolution is done by binding the evidentials and their antecedents the source of information. Thus, it is predicted that stimuli which satisfy evidential content improve the certainty of a proposition. In other words, if appropriate information source exists for the evidential in context then the frequency of IP tones whose level end with L is high but if not, the frequency of IP tones whose level end with L is low. This prediction is only partly supported by the result of the experiment. While utterances featuring the Reportative and Inference evidentials with stimuli show stronger certainty than those without stimuli, utterances featuring the Direct evidentials with stimuli do not show stronger certainty than those without stimuli. This result may be affected by accommodation (Lewis 1979): adding the presupposed content at the proper position in context. If the resolution of binding fails, the previous context does not satisfy the presuppositions imposed by the sentence, and it may be adjusted through accommodation. Accommodation thus can neutralize the absence of stimulus in the experiment.

According to K. Chung (2005) and J. Lee (2011), the Direct evidential *te* combined with \emptyset conveys a Direct evidential interpretation. On the other hand, the Direct evidential *te* combined with tense and modal markers like *ess* and *keyss* conveys an Inference evidential interpretation. It is cross-linguistically assumed that the Direct evidential shows higher degree of certainty than the Inference evidential. Interestingly enough, the result of the experiment supports their argument. As shown in Table 7, in the first group, which consists of IP tones of utterances featuring the Direct evidential with the anterior tense *ess*, 68.8 % of IP tones of utterances end with L and 31.2 % of IP tones of utterances end with H. In the second group, which consists of IP tones of utterances featuring the Direct evidential with \emptyset , 81.3 % of IP tones of utterances end with L and 15.7 % of IP tones of utterances end with H. In the third group, which consists of IP tones of utterances featuring the Direct evidential with the anterior tense *ess*, 67.3 % of IP tones of utterances end with L and 29.7 % of IP tones of utterances end with H. In contrast to \emptyset , an anterior tense or a modal undermines the certainty of the proposition resulting from evidential content.

In addition, as pointed out in 2.2.4, a modal undermines the certainty of the proposition resulting from evidential content. Related to this, *ci* shows a crucial result. The evidential content of *ci* loses its certainty of propositions where it occurs with a modal operator. I cannot find such a stark difference with other evidentials. This may provide supporting evidence that *ci* can be distinguished from two other evidentials in Korean.

2.4 Conclusion

In this chapter, the typology of the evidentiality is presented considering cross-linguistic studies. I have argued that the system of Korean evidentiality is compatible with B-1 system in Aikhenvald (2004: p.105). Hence, there are three evidential types in Korean: Direct *te*, Reportative *tay*, Inference *ci*. I opened the possibility that we can add some Inference evidentials such as *ney* and

kwun but this is left for future work because we cannot yet clearly understand the relation between evidentiality and mirativity.

As is known by cross-linguistic studies (Aikhenvald 2004), it is difficult to tell whether a language has a grammaticalized evidential system. As shown in 2.2.1, Aikhenvald (2004) discussed why it can be difficult to tell whether a language has a grammaticalized evidential system. However, Anderson (1986) and Aikhenvald (2004) agree at least on two features to detect a grammaticalized evidential system. The evidentials should fall into the grammaticalized categories such as inflections and clitics and its primary meaning should be encoding the source of information. Based on criteria by Anderson (1986) and Aikhenvald (2004), I reject I. Kwon's (2010) proposal that periphrastic suffixes such as *na po* and *n moyangi* are the Inference evidential because they are not the verbal suffixes.

Another important implication of Korean evidential system proposed in this chapter is that Korean evidentiality is fundamentally distinct from epistemic modality. Recall that *l swu* and *l kes* are treated each as an epistemic possibility and epistemic necessity in Korean. It seems clear that *l swu* and *l kes* are not evidentials in that they do not explicitly say anything about the process of encoding the source. In addition, they cannot satisfy the condition that the evidentials should be the grammaticalized categories such as inflections and clitics. *l swu* and *l kes* are periphrastic suffixes. Periphrastic suffixes are different from ordinary inflectional suffixes in that they attach to the edge of a phrase rather than to a verb stem. Lastly and most importantly, all modal operators in Korean are expressed by means of the future time reference. As illustrated in 2.1.3, future time reference is interpreted in terms of epistemic modality because it is irrealis, and thus it corresponds to probability, possibility, uncertainty, doubt. The future time reference of Korean modality is not associated with characteristics of Korean evidentiality. Hence, evidentiality should be analyzed as a distinguished linguistic category, as has been argued by de Haan (1999)

and Aikhenvald (2004). However, it should be pointed out that my proposal in this chapter is mainly based on empirical evidence and does not show theoretical achievement. I will explore theoretical issues on Korean evidentiality in the next two chapters.

Chapter 3

Evidentials as Presupposition

It is well acknowledged that there are two types of evidentials cross-linguistically (Murray 2010): illocutionary evidentials (Faller 2002; 2006; Murray 2010) and epistemic evidentials (Izvorski 1997; Matthewson et al. 2007; McCready & Ogata 2007). In particular, illocutionary evidentials have been analyzed under speech act theory, while epistemic evidentials have been analyzed under a modal analysis. I provide the general overview in this chapter of previous formal theories to investigate Korean evidentials. I first argue that evidentiality in Korean makes a contribution and operates on the level of presuppositions.

The modal analysis assumes that evidentiality is a subtype of epistemic modality and treats evidential implications as presuppositions (e.g., Izvorski 1997; Matthewson et al. 2007). This idea originated from the descriptive studies which placed evidentiality under another category such as mood or modality (Bybee 1985; Palmer 1986; Chafe & Nicholas 1986). A seminal series of papers (Kratzer 1977; Kratzer 1981; Kratzer 1991) serve as a good basis for the idea that evidentials can play a role as modal base in that the degree of the speaker's certainty from the evidentiality is inherently quantificational structure. Based on Kratzer's proposal, Izvorski (1997) and Matthewson et al. (2007) argued that evidentials set up quantification over possible worlds, and are limited to epistemic conversational backgrounds.

The illocutionary analysis presents an analysis of evidentiality based on speech act theory inspired by Searle and Vanderveken (1985) and treats evidentials as illocutionary operators. Under the illocutionary analysis, evidentials are functions from speech acts to speech acts. For example, *-mi* in Quzco Quechua is an illocutionary operator that modifies the sincerity condition of simple speech acts by adding the source of the information and plays role of a function that

takes the illocutionary force associated with assertions, which has the sincerity condition that a speaker believes the proposition *p* as its argument and outputs the illocutionary force of assertion which has the additional sincerity condition that a speaker has the best possible grounds from the source of information (Faller 2002).

This chapter is structured as follows. In section 3.1, I will try to show that all three evidential types in Korean – Direct *te*, Reportative *tay*, Inference *ci-* fall into the same category. To achieve this goal, I provide various tests such as negation, challengeability and the interrogative flip test. Most of the tests are applied by Faller (2002; 2006) and they are also applied in following studies (Matthewson et al. 2007; Murray 2010). The negation test cross-linguistically shows a consistent result on evidentials: the evidential content always take scope over negation. The challengeability test is based on the assumption that only propositional content can be challenged. For the purpose of this test, the form of “That is not true” is used to challenge the target sentence. Interrogative flip test is related to the observation that evidentials shift from being from speaker-anchored to being addressee-anchored in question.

Section 3.2 compares several analyses of the evidentiality of Korean. I will review three different theoretical frameworks: modal analysis, illocutionary analysis and anaphoric analysis. In 3.2.1, I will consider a modal analysis for Korean evidentiality. J. Lee’s (2011) study focusing on the Direct evidential *te* demonstrates that this evidential has an interpretation corresponding to epistemic modality. I reject her analysis based on several diagnostic related to modals and conditionals. In 3.2.2, I demonstrate that Korean evidentials are not illocutionary operators. In 3.2.3, I support a presuppositional analysis for Korean evidentiality because the Korean data provide empirical evidence supporting this and a presuppositional approach is able to shed light on a number of puzzles from previous literature.

3.1 Diagnostic Tests for Evidentiality

Previous studies of evidentiality with formal semantics approaches tried to build up the tests which can detect evidentials. Most of these tests are applied by Faller (2002; 2006) and they are also applied in following studies (Matthewson et al. 2007; Murray 2010). Unfortunately, it is not possible to distinguish sharply between propositional content and evidential content but “there is a basic distinction between the contribution of the evidential and the contribution of the scope of the evidential---” (Murray 2010). Murray (2010), following Matthewson et al. (2007), suggested that diagnostic tests can be subgrouped into two types. One is for tests which all evidentials agree on and the other is for the tests which can distinguish illocutionary and epistemic evidentials. In this section, I will try to identify evidentials in Korean and thus confirm the Korean evidential system given in chapter 2. In attempting to achieve this goal, I provide various tests such as challengeability, negation and the interrogative flip test. I address diagnostic tests which can detect illocutionary and epistemic evidentials in next section

3.1.1 The Projection of Negation

The negation test cross-linguistically shows a consistent result on evidentials: the evidential content always takes scope over negation (De Haan 1999; Faller 2002; Izvorski 1997; Matthewson et al. 2007)³¹. This holds both for epistemic evidentials like those in St’at’imcets and

³¹ In spite of extensive studies supporting the claim that evidentials take wide scope over negation cross-linguistically, evidentials in Ahka and Warlpiri are claimed to be able to scope under negation (Aikhenvald 2004) and some Japanese evidentials also allow their evidential content to be negated (McCreedy & Ogata 2007).

McCreedy & Ogata (2007) notes that information source can be negated by a group of indirect negations. Although negation does not apply directly to the evidential, the negated attitude does scope over information source.

ame-ga yoo-ni-wa omoenai
rain-Nom fall YOO-Dat-Top can’t think

for illocutionary evidentials like those in Cuzco Quechua. However, according to Matthewson et al. (2007), the mechanism regulating the interactions between negation and the two types of evidentials are different. The modal analysis predicts that the evidential content projects through negation because it is a presupposition. Under an illocutionary analysis, the evidential should take scope over any operator contained within the propositional content, including negation. In spite of different theoretical backgrounds, the two theories commonly predict that the evidential content will still survive in negative contexts. A sentence in (42) from Izvorski (1997) shows scope interactions between evidentials and negation.

(42) *Ivan ne izkaral izpita*

Ivan not passed-PE the-exam

= “Ivan didn’t pass the exam (it is said/I infer).”

≠ “It is not the case that {it is said/I infer} that Ivan passed the exam.”

(Izvorski 1997)

Izvorski (1997) supported the argument that the evidential interpretation of Perfect of Evidentiality (PE) is a presupposition by the standard negation test. Negation of PE statements draws the interpretation that the core proposition is being negated but its information source is not.

In a study by Faller (2002) on Cuzco Quechua, the evidential contents denoted by the evidential clitics *-mi*, *-chá* and *-si* take scope over negation. Negated sentences can never mean

‘It doesn’t look to me like it’s going to rain.’

According to McCreedy & Ogata (2007), the above example is a strong piece of supporting evidence for the modal analysis because the evidential can fall into the scope under any operator contained within the propositional content. Negation is a part of proposition content. In the Korean data, I can not find any examples in which the evidential content is negated, so I will not consider this in the thesis.

that a speaker lacks evidence for the propositional content of the sentence. The example in (43) shows that the evidential content is not blocked by negation;

(43) Ines-qa mana-n/-chá/-s qaynunchaw ~na~na-n-ta-chu watuku-rqa-n.

Inés-top not-mi/-chá/-si yesterday sister-3-acc-chu visit-pst1-3

'Inés didn't visit her sister yesterday.'

ev= (i) speaker has direct/conjectural/reportative evidence that Inés did not visit her sister yesterday

(ii) # speaker does not have direct/conjectural/reportative evidence that Inés visited her sister yesterday

(Faller 2002: p. 227)

The same result as for Cuzco Quechua holds for Korean. As shown in (44a-c) below, all three Korean evidentials take scope over the negation. The negation cannot be construed as negating the indirect status of the evidential content, and only propositional content is under the scope of the negation.

(44) a. Chulswu-ka Tayho-hako ecey sojwu-lul an masi-te-la.

Chulswu-Nom Tayho-Com yesterday liquor-Acc Neg drink-Ev-Dcl

‘Chulswu and Tayho didn’t drink sojwu yesterday.’

ev= (i) speaker has direct evidence that Chulswu and Tayho didn’t drink sojwu yesterday.

(ii) # speaker does not have direct evidence that Chulswu and Tayho drank sojwu yesterday.

b. Chulswu-ka Tayho-hako ecey sojwu-lul an masi-ess-tay.

Chulswu-Nom Tayho-Com yesterday liquor-Acc Neg drink-Ant-Ev

‘Chulswu and Tayho didn’t drink sojwu yesterday.’

ev= (i) speaker has reportative evidence that Chulswu and Tayho didn’t drink sojwu yesterday.

(ii) # speaker does not have reportative evidence that Chulswu and Tayho drank sojwu yesterday.

c. Chulswu-ka Tayho-hako ecey sojwu-lul an masi-ess-ci.

Chulswu-Nom Tayho-Com yesterday liquor-Acc Neg drink-Ant-Ev

‘Chulswu and Tayho didn’t drink sojwu yesterday.’

ev= (i) speaker has conjectural evidence that Chulswu and Tayho didn’t drink sojwu yesterday.

(ii) # speaker does not have conjectural evidence that Chulswu and Tayho drank sojwu yesterday.

Let us take a look at the cases of negation in Korean. While the propositional content embedded within the scope of negation cannot project out, the evidential content can. In (44 a-c) given above, I showed all three types of Korean evidentials always take over negation. This result suggests that the Korean evidentials *te*, *tay* and *ci* are identified as the same category.

That is, even if they are introduced by expressions that are embedded within the scope of negation, they can behave as if they weren't embedded, and survive as entailments of the whole sentence.

3.1.2 Challengeability Test

The challengeability test is motivated by the observation that there is a significant difference between an evidential and propositional content in that propositional content, which is truth-conditional, can be agreed with or rejected; in contrast, an evidential content cannot because it is not the main point of the sentence (Faller 2002; Matthewson et al. 2007). Faller (2002) offers a test for detecting evidentials called the ‘challengeability test’; it is also called the ‘assent/dissent’ test by Papafragou (2006). Matthewson et al. (2007) elaborated the test by denial of propositional content in order to avoid the possibility that presuppositions and sincerity conditions of speech acts are being challenged. For the purpose of this test, they used the form of “That is not true” to challenge the target sentence. In doing so, the anaphoric link occurs between the previous utterance and the pronoun. Thus, the logic of challengeability test is similar with that of the anaphora test which is proposed by Asher (1993) to distinguish the proposition from the event. Let us briefly describe his idea. Let’s assume that there is some anaphoric link between two contexts C and C’. If the anaphoric link is felicitous, then C and C’ may be satisfied by the same sort of entity. If the anaphoric link is infelicitous, then C and C’ may not be satisfied by the same sort of entity. To clarify the point, I cite examples of Cuzco Quechua evidentials in Faller (2002).

(45) a. Ines-qa qaynunchay ~na~na-n-ta-n watuku-rqa-n.

Inés-top yesterday sister-3-acc-mi visit-pst1-3

p='Inés visited her sister yesterday.'

ev= speaker saw that p

b. Mana-n chiqaq-chu. Manta-n-ta-lla-n watuku-rqa-n.

not-mi true-neg mother-3-acc-lim-mi visit-pst1-3

'That's not true. She only visited her mother.'

c. Mana-n chiqaq-chu # Mana-n chay-ta riku-rqa-nki-chu.

not-mi true-neg not-mi this-acc see-pst1-2-neg

'That's not true. You didn't see this.'

(Faller 2002: p.157)

It is possible to make explicit that the propositional content is challenged in (45b). In other words, the anaphoric links are felicitous when initial context C is negated and updated in context C' in (45b). The anaphoric link is licensed by the added information related to the proposition under (45b). Hence, the response in (45b) successfully denies the propositional content. Conversely, in (45c), the evidential content is not successfully challenged. An anaphoric links are infelicitous when the initial context C is negated and updated under context C'. Anaphoric link is not licensed by added information related to the evidential content. We call it a clash of type requirement, following Asher (1993). Thus challenging the information source leads to infelicitous utterances as a result. According to this test, the evidential meaning of *-mi* does not contribute to the propositional content.

D. Lim (2010) applied this test to Korean Reportative and Direct evidentials. Inspired by Faller (2002) and Matthewson et al. (2007), he proposed that the presuppositional content of *tay* cannot be challenged.

(46) (Scenario: your car was stolen)

a. Bill-i nay cha-lul hwumchi-ess-tay.

Bill-Nom my car-Acc steal-Ant-Ev

‘(Reportedly) Bill stole my car.’

b. Kukes-un sasil-i ani-ya. #Ne-nun Bill-i ney cha-lul

That-Top fact-Nom Neg-Dcl you-Top Bill-Nom your car-Acc

hwumchi-nun kes-ul po-n kes-ul icepeli-ess-e.

steal-Adn DN-Acc see-Adn DN-Acc forget-Ant-Dcl

‘That’s not true. You forgot that you saw Bill steal your car.’

As shown in (46), challenging the information source results in an infelicitous conversation.

Based on this observation, D. Lim (2010) proposed that the type of information source is presuppositional, not truth-conditional. In examples with *te*, we face the same problem. It can be relatively easily observed that the evidential component of *te* cannot be dissented, as shown in (47).

(47) (Scenario: your car was stolen)

A: Bill-i nay cha-lul hwumchi-te-la.

Bill-Nom my car-Acc stole-*te*-Dcl

‘(I saw that) Bill stole my car.’

B: #Kukes-un sasil-i ani-ya. Ne-nun Bill-I ney cha-lul

That-Top fact-Nom Neg-Dcl you-Top Bill-Nom your car-Acc

hwumchi-ess-ta-nun kes-ul Mary-eykey tul-ess-ul ppwun-i-ya.

steal-Ant-Dcl-Adn DN-Acc Mary-from hear-Ant-Adn DN-be-Dcl

‘That’s not true. You only heard from Mary that Bill stole your car.’

As shown in (47), the sentence is infelicitous when the presupposition that *te* introduces about the information source is denied. This means that, as with *tay*, the evidential implication that *te* introduces is presuppositional. Challenging the evidential content cannot be accepted and only propositional content is agreed with or rejected. Now we apply this test to the Koren inference evidential *ci*.

(48) (Scenario: your car was stolen)

A: Bill-i nay cha-lul hwumchi-ess-ci.

Bill-Nom my car-Acc stole-Ant-Ev

‘(speaker infers that) Bill stole my car.’

B: #Kukes-un sasil-i ani-ya. Ne-nun Bill-i ney cha-lul

That-Top fact-Nom Neg-Dcl you-Top Bill-Nom your car-Acc

hwumchi-ess-ta-nun kes-ul Mary-eykey tul-ess-ul ppwun-i-ya.

steal-Ant-Dcl-Adn DN-Acc Mary-from hear-Ant-Adn DN-be-Dcl

‘That’s not true. You only heard from Mary that Bill stole your car.’

Korean sentences with inference evidentials are similar. The propositional content in the scope of the evidential can be challenged, but the evidential content cannot be. The evidential content of (48) cannot be challenged by ‘# That’s not true, You only heard from Mary that Bill stole your car.’ Hence, as in other languages like Cuzco Quechua and Cheyenne, the challengeability test holds for all kinds of evidentials such as the Reportative, the Direct and the Inference.

3.1.3 Interrogative Flip

The perceiver of evidentials in declarative and interrogative sentences is different in their point of

view anchoring. In particular, a speaker can evaluate the encoding information and assess the truth of the proposition in a declarative sentence, whereas the addressee can evaluate the encoding information and pick true answers from possible answer sets in interrogative sentences. The term “Interrogative flip”³² refers to the phenomenon such that evidentials shift from being speaker-anchored to being addressee-anchored when a sentence is switched from declarative to interrogative (Tenny 2006).

Although interrogative flip is discussed as a test for evidentials in this thesis, it should be understood that this is not done only for evidentials. Consider an interesting example of interrogative flip in Japanese. In a declarative sentence the default meaning of *furusato* is the speaker’s village, while, in the interrogative sentence, its default meaning is the addressee’s village.

- (49) a. furusato wa samui desu
 ancestral village-Top cold-Cop
 ‘(My) ancestral village is cold’
- b. furusato wa samui desu ka
 ancestral village-Top cold-Cop-ka
 ‘Is (your) ancestral village cold?’
- (Tenny 2006: p. 262)

In thinking about evidentials in general, evidentials in interrogative sentences anchor to the

³² According to Garrett (2001), interrogative flip (origo shifts) has been widely discussed in the Tibeto-Burman literature. The first scholar to notice it was Hale (1980), who analyzed similar data in Newari, a closely related Tibeto-Burman language.

addressee cross-linguistically (Garrett 2001; Faller 2002; Matthewson et al. 2007; Murray 2010). In Cheyenne, interrogative flip holds for both polar questions and content questions, though languages vary with regard to types of questions in which evidentials can occur (Murray 2010). For polar questions with evidentials, the only proper interpretation is one where the evidential is anchored to the addressee, as in (50).

(50) Cheyenne (Illocutionary)

Mó=énémene-séstse Floyd

y/n=3-sing-rpt.3sg Floyd

‘Given what you heard, did Floyd sing?’

In Korean examples, the same argument can be applied to *tay* and *te* in both content and polar questions, however, *ci* shows different interpretation depending on question types.

(51) a. Chulswu-ka Tayho-hako ecey sojwu-lul masi-te-nya?

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ev-Int

‘Given what you saw, did Chulswu and Tayho drink sojwu yesterday?’

b. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-tay?

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev

‘Given what you heard, did Chulswu and Tayho drink sojwu yesterday?’

c. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-ci?

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev

‘Given what I know as what you know, did Chulswu and Tayho drink soju yesterday, right?’

In (51a) and (51b), the addressee in the interrogative sentence is expected to have the source of information about whether ‘Chulswu and Tayho drank soju yesterday’. On the other hand, in (51c), it seems that the evidential in the interrogative sentence anchors to the both speaker and addressee at the same time. As indicated 2.2.4.2, the interpretation of (51c) is similar with tag question in English. Korean inference evidentials in interrogative sentences allow speaker’s evaluation of the encoding information to be extended to addressee’s evaluation of encoding information.

3.2 Previous Formal Analyses of Evidentiality

In this section, I will present three different approaches that are offered as theoretical frameworks for evidentiality. We outline the major analyses of evidentials in the formal semantic literature: an epistemic modal analysis (Izvorski 1997; Garrett 2001; Matthewson et al. 2007; McCready and Ogata 2007 among others), an illocutionary analysis (Faller 2002, Murray 2010), and a presuppositional analysis (McCready and Asher 2006; D. Lim 2010).

3.2.1 Evidentiality and Epistemic Modality

The status of evidentiality has long been controversial and there have been arguments on whether it should be analyzed as a distinguished linguistic category (De Haan 1999; Aikhenvald 2004), or whether it can be subcategorized under another category like mood or modality (Bybee 1985; Palmer 1986; Chafe & Nicholas 1986). In the previous literature, evidentiality has been much

discussed in its relation to epistemic modality (e.g. Palmer 1986; McCreedy & Ogata 2007; Matthewson et al. 2007 among many others). A seminal series of papers (Kratzer 1977; Kratzer 1981; Kratzer 1991) provide a good basis for the idea that evidentials can play a role as the modal base in that the degree of a speaker's certainty from evidentiality is inherently a quantificational structure. Kratzer formalizes contextual dependencies with two inventions which are not familiar in the traditional semantics. The modal base can set up possible worlds that can be separated from the actual world and the ordering source can measure the plausibility of different possibilities given by the modal base. According to Kratzer's theory, modals are interpreted as quantifiers that range over the best worlds picked out by the ordering source in the modal base.

Based on Kratzer's proposal, Izvorski (1997) and Matthewson et al. (2007) argued that evidentials set up quantification over possible worlds, and are limited to epistemic conversational backgrounds. It is also assumed that Kratzer's theory of epistemic modality will be sufficient as a framework for explaining evidentiality formally. As far as I understand, this line of approach appears in J. Lee's (2011) study about the Korean direct evidential *te*. She proposes that the Korean direct evidential *te* has an interpretation corresponding to epistemic modality.

$$(52) \quad [[-te-]] = \lambda P_{\langle s, i, t \rangle}. \lambda w \lambda t \exists t'' [t'' \prec t \wedge \forall w' (w' \in BEST(SO, ST/DX, w, t'')) \\ \rightarrow P(w')(t'')] \quad (J. Lee 2011)$$

Let us sketch out the modal interpretation of J. Lee (2011). Besides adopting the *BEST* function by Portner (1998) in (52), J. Lee (2011) followed the Kratzer's invention and Condoravdi's (2002) development in that she used the modal base and ordering source and considered the scope between the modality and tense. According to her, *BEST(SO, ST/DX, w, t)* is a function from world-time pairs to sets of worlds that are ranked according to the ordering source

Stereotypical/Doxastic (w, t) among the worlds determined by the modal base, e.g. sensory observation (w, t). The worlds in *BEST* ($SO, ST/DX, w, t$) are those that are compatible with what the speaker knows based on sensory observations in w at t and are ranked according to the speaker's expectations about what the world 'w was/is/would' be like' prior to/at/after t following the lexical entry for *te*, which seems compatible with those interpretations. Although I found some minor defects in it, I believe that this is the most convincing model for a modal analysis of Korean evidentiality if we have empirical evidence. In the remainder of this section, I will show through Korean data that Korean evidential is not modality.

3.2.1.1 Distributional Diagnostics

Nuyts (2009) claimed that “a speaker is not concerned with his/her commitment to a state of affairs in several different ways and dubbed it “one-commitment-per-clause principle.” He developed the original idea from “one-chunk-per-clause principle” by Givón (1984) and “one-new-idea-constraint” by Chafe (1994). Roughly speaking, cognitive implausibility prevents combining more than one modal qualification per clause. If we apply this principle to the relation between evidentiality and epistemic modality, a modalized clause receives either an epistemic or evidential qualification.

(53) a. Chulswu-ka Minhee-hako kukcang-ey ka-keyss-te-la.

Chulswu-Nom Minhee-Com theater-Loc go-Mod-Ev-Dcl

‘(a speaker infers) Chulswu and Miyoung would go to a theater.’

b. ??Chulswu-ka Minhee-hako kukcang-ey ka-keyss-tay.

Chulswu-Nom Minhee -Com theater-Loc go-Mod-Ev

‘(speaker is told that) Chulswu and Miyoung would go to a theater.’

c. Chulswu-ka Minhee-hako kukcang-ey ka-keyss-ci.

Chulswu-Nom Minhee -Com theater-Loc go-Mod-Ev

‘(speaker infer) Chulswu and Miyoung would go to a theater.’

Recall that the meaning of *keyss* is prediction and it functions as a modal suffix in 2.1.3. In many languages with obligatory evidentiality, evidentials co-occur with non-indicative modalities like conditional, dubitative, and irrealis and so on (Aikhenvald 2004). However, if Korean evidentials are treated as modality, it is hard to explain why the examples in (53 a, c) are acceptable considering the “one-commitment-per-clause principle.” The fact that evidential and epistemic modals in Korean can occur under the same clause shows that those are two different categories.

Before we proceed, we must say a little bit about (53b) because it may be a counterexample to the proposal that evidentiality and modality are two different concepts. The question may be raised whether the two categories clash based on (53b). However, there is an alternative reason for this. In fact, the oddity is not caused by interaction between modality and evidentiality but is caused by the interaction between modality and reported speech. According to Papafragou (2001), epistemic modality cannot occur under the scope of reported speech because epistemic modality is deictic. In other words, the epistemic modality always refers to the beliefs of the speaker.

(54) ??Minswu-ka cwungtong-eyse cencayng-i ilena-keyss-ta-ko ha-n-ta.

Minswu-Nom Middle.East-Loc war-Nom rise-Mod-Dcl-Comp do-Prs-Dcl

‘Minswu says a war would break out in the Middle East.’

In 2.2.3.1, I explained that the form *tako han* in (54) is a quotation expression. This is a combination of the sentence-terminal suffix *ta* of the embedded clause, the complementizer *ko*, the contracted form *ha* of the embedding predicate *malha* ‘say’, and the present imperfective form *n*. Strictly speaking, this is a different structure from evidential *tay*. Even so, it shows that *keyss* in a quotation expression makes the utterance odd. Intuitively, the speaker’s belief conflicts with the original speaker’s belief state introduced by the quotation expression.

3.2.1.2 Constraints on Conditionals

Kratzer (1991) offered that the antecedent of a conditional should be seen as a restrictor of the contextual argument of the modal. In other words, antecedents are used to hypothetically restrict attention to various modal operators. Consider a conditional sentence in (55).

(55) If John is not in his office, he might be in the café.

In Kratzer’s proposal, what happens is that the proposition ‘John is not in his office’ is added to the context that the modal *might* is sensitive to. The modal then claims that there are some worlds compatible with the updated context and with the proposition that ‘John is not in the office in which he is in the café’. We will not really deal with conditionals here. However, I simply point out that based on Kratzer’s proposal updating of an antecedent of conditionals also affects modals in the consequent.

One interesting features of Korean conditionals is that two different types of conditional markers exist; *myen* and *tamyen*. For the purpose of the study, we roughly sketch out the characteristics of and discrepancies between those markers. Previous research (e.g., S. Bak 2003; C. Lee 1997) shows that Korean conditional markers *myen* and *tamyen* can be dealt with in terms

of the speaker's epistemic attitude toward the antecedent. According to this approach, the particle *myen* is a *typical conditional marker* that is used with any type of speaker attitude, e.g. realis and irrealis, while the particle *tamyen* is used with a speaker's irrealis attitude and is therefore referred to as an *irrealis conditional marker*.

The *myen*-clause is contrasted with the English *if*-clause which can be used in the uncertain and counterfactual worlds but not in the realis world.

- (56) pom-i o-myen, kkoch-i phi-n-ta.
spring-Nom come-if, flower-Nom bloom-Prs-Dcl
'When spring comes, flowers bloom.'

In (56), as the speaker is sure of spring coming, that is the reason that *when* is used instead of *if* for *myun* in its English translation. S. Bak (2003) classifies all sentences used with *myen* as conditionals and calls the particle *myen* 'the typical conditional marker'.

- (57) a. yelsi-ka toy-myen, cong-i wulli-n-ta.
ten o'clock-Nom become-if, bell-Nom ring-Prs-Dcl
'When it becomes ten o'clock, the bell rings.'
- b. *yelsi-ka toy-n-tamyen, cong-i wulli-n-ta.
ten o'clock-Nom become-if, bell-Nom ring-Prs-Dcl
'When it becomes ten o'clock, the bell rings.'

The situation described in the antecedents in (57a) supposed to happen as a matter of fact, so it is

in the realis domain. The marker *tamyen* cannot be used in (57b). S. Bak (2003) considers *tamyen* as an irrealis conditional marker. This proposal is compatible with von Stechow (2002) in that conditionals convey counterfactuals when they are referred to as the presupposition that the proposition expressed by the antecedent is not possible. Interestingly, the difference between these two conditionals in Korean is compatible with the discrepancy between modal markers and evidentials in Korean.

(58) a. # pom-i o-n-tamyen, kkoch-i phi- te-la (tay/ci).
 spring-Nom come-prs-if, flower-Nom bloom-Ev-Dcl (Ev)

b. pom-i o-n-tamyen, kkoch-I phi-l kes-i-ta (suw-iss-ta).
 spring-Nom come-prs-if, flower-Nom bloom- Adn DN-be-Dcl

If Korean evidentials are treated as modality, it is expected that (58a) should be acceptable; however, this result shows that evidential and epistemic modals are different categories. Stone (1997) and Asher & McCready (2007) convincingly proposed that counterfactuals can be regarded as an illustration of bound variable modality in that “updating the discourse context with a conditional will automatically be reflected within the epistemic possibilities permitted by the discourse context”

(59) a. If I were not slept, I would topple over tomorrow.
 b. Irr (I not sleep tonight) \Rightarrow Would (I topple over tomorrow).

(Asher & McCready 2007)

I suggest that (59) can explain the contrast between (58a) and (58b). The analysis of (59) is originally based on English but can be easily applied to Korean data. The semantics of counterfactuals is the result of applying the conditional operator to two arguments, the first given by the antecedent clause and modified by an irrealis operator, the second given by the consequent, which is invariably modified by an epistemic modal in English and also in Korean. If Korean evidentials are a special type of epistemic possibility, (59a) should be allowed but it is not.

3.2.1.3 Modal Subordination

Generally speaking, modal subordination is context dependency of modal expressions which affect anaphoric links across sentences. There is a voluminous literature to explain how modals are interpreted in context (Roberts 1989; Frank 1997; Stone & Hardt 1997; Asher & McCready 2005a; 2005b).

- (60) a. A wolf_i might walk in. #It_i is hungry.
 b. A wolf might walk in. It would eat you first.
- (61) a. A thief_j might break in. # He_j will take the silver.
 b. A thief might break in. He would take the silver

Roberts (1989) is one of the studies which tried to give a formal treatment of modal subordination. She proposed that the contents of the subDRS can be copied from the matrix of the semantic operator *might* in (60b) and (61b). Then, the copied subDRS is accommodated into the restrictor of the semantic operator of the second subSDR. Frank (1997) adopted an anaphoric approach based on dynamic semantics. In her system, the discourse referents introduced in a part of a modal are available for referents occurring in the later modal linked to the previous one.

Anaphoric linking of referents is constrained depending on modal combinations.

In 3.2.1., I reviewed J. Lee's (2011) analysis of the Korean Direct evidential *te*. She proposes that the Korean direct evidential *te* has an interpretation corresponding to epistemic modality. To back up her proposal, she showed some evidences from Korean data. One of them is modal subordination. She argues that examples in (62) illustrate that the evidential *te* behaves like a modal.

(62) Context: When the speaker got home yesterday, he found his room messy with his belongings scattered on the floor. He found a small window in the room left open. Now, he says:

a. Totwuk-i tul-ess-te-la. #Ku-nun khi-ka cak- Ø -ta.

Thief-NOM break.in-PAST-TE-DECL he-TOP height-NOM short-PRES-DECL

‘(A speaker inferred that) a thief broke in. #He is short.’

b. Totwuk-i tul-ess-te-la. Ku-nun khi-ka cak-um.ey.thullimep-ta.

Thief-NOM break.in-PAST-TE-DECL he-TOP height-NOM short-must-DECL

‘(A speaker inferred that) a thief broke in. He must be short.’

According to Lee J. (2011), the contrast between (62a) and (62b) is compatible with (60a) and (60b). In particular, if you look at (62a), the first evidential evokes ‘the possible world’ and the referents within the possible world cannot introduce an anaphoric linking within the real world in the second sentence. The gap between two worlds does not permit the anaphor *he* in the unmodalized sentence to link to the preceding nominal expression *a thief* in the modalized sentence. However, in (62b), *te* and *thllimep* are both new world markers. The block between two

worlds disappears and the anaphoric linking works. To her, the examples in (62) show the relation between modal and nonmodal information.

The motivations that I reject J. Lee's (2011) analysis are twofold. First, the notion of inference does not come from the content of the evidential *te* but from the combination of *ess* and *te*. We can easily find a counterexample to (62a) if we place *ess* in the sentence.

(63) Totwuk-i tuleo -te-la. Ku-nun khi-ka cak- ass -ta.

Thief-Nom come.in-Ev-Dcl he-Top height-Nom short-Ant-Dcl

‘(The speaker saw) a thief came in. He was short.’

If you look at (63), the first evidential, according to her, can evoke ‘the possible world’ in the same way with (62a) and it is expected that the referents within the possible world cannot introduce an anaphoric linking within the real world in the second sentence with the past tense marker *ess*. However, (63) is perfectly acceptable semantically and pragmatically. If the evidential *te* is a real modal, the preceding nominal expression *a thief* in the modalized sentence must not be linked to the anaphor *he* in the unmodalized sentence.

Next, to confirm the claim that the direct evidential *te* has an interpretation corresponding to epistemic modality, it is natural to compare the sequence of a modal operator and an evidential. We already showed the result of the sequence of the modal operators from parallel English examples in (60) and (61). Let's look at a Korean example.

(64) Totwuk-i tuleo -l swu iss-e. # Ku-nun khi-ka cak-te-la (tay/ci).

Thief-Nom come.in-Adn DN exist-Dcl he-Top height-Nom short-Ev-Dcl (Ev)

‘A thief might come in. (A speaker saw (is told/infer)) he is short.’

Based on the data above, I argue that Korean evidentials cannot be explained under the modal analysis. If a Korean epistemic modal is followed by an evidential, the access to the antecedent by the pronoun is blocked. The first modal operator, *swu iss* in (64) (a new world-marker by Stone & Hardt (1997)) evokes ‘the possible world’ and the referents within the possible world cannot introduce an anaphoric linking within the real world in the second sentence. In other words, it can be simply accounted for that Korean evidentials are not related to the modality and are an independent category.

3.2.1.4 Truth/Falsity of the Assertion

Faller (2002) offered a diagnostic test which is called ‘truth/falsity of the assertion’ by Matthewson et al. (2007). The purpose of the test is to show that evidentials behave differently from epistemic modals. According to Faller’s (2002) observation, the Reportative evidential can felicitously be used when the truth or falsity of the prejacent is already known. This is contrasted with the behavior of modals in English.

(65) #It may be raining, but it is not (raining).

#It must be raining, but it is not (raining)

(Faller 2002: p. 193)

As illustrated in the examples above, epistemic modals cannot felicitously be used when the speaker already knows the truth or falsity of the prejacent. However, the Reportative evidential in Cuzco Quechua can be used even when the speaker already knows the truth or falsity of the prejacent. The data presented in (65) demonstrate that the Reportative evidential *-si* can be

feliculously used even when the speaker believes that the prejacent is false.

(66) Para-sha-n-si, ichaqa mana crei-ni-chu.

rain-prog-3-si but not believe-1-neg

p='It is raining, but I don't believe it.'

ev= speaker is/was told that it is raining

(Faller 2002: p. 194)

Based on (66), Faller (2002) proposed that *-si* is a function from a speech act of assertion into a speech act of presentation by which a speaker plays the role of channel of communication between the source and the addressee. Accordingly, a speaker escapes from any commitment to the truth or falsity of the prejacent. Chung (2005; 2010) offered that Korean Reportative evidential *tay* shows the presentation speech act, following Faller (2002).

However, D. Lim (2010) rejected the analysis along these lines. He demonstrates that the Reportative evidential in Korean can be used when the speaker is committed to the truth or falsity of the prejacent. He argued that the conversation in (67) supports his idea.

(67) (Context: I did some work for a company, and they said they put my pay, \$200, into my bank account. However, they actually did not pay me at all.) (adapted from Matthewson et al. 2007: p. 214)

#Hoysa-ka na-hanthey 200 talle-lul cwu-ess-ta-nta.³³

company-Nom I-Dat 200 dollar-Acc give-Past-ta-Decl

³³ In this dissertation, it is assumed that there is no difference between *tanta* and *tay* except for sentence styles. Different variants of Reportative evidentials can occur depending on sentence styles. Specifically, *tanta* represents the plain style, *tapnita* represents the deferential style and *tay* represents the intimate style. See 2.2.3.2 for detail.

Haciman hoysa-nun 200 talle-lul na-hanthey cwu-cianh-ass-e.

However company-Top 200 dollar-Acc I-Dat give-Neg-Past-Decl

‘(Reportedly) the company gave me 200 dollars, but they did not give me 200 dollars.’

According to D. Lim (2010), the Reportative evidential is a presupposition trigger and its implication is neither related to modality nor to illocutionary. Relatedly, in the case of (67), the Reportative evidential in Korean can not be used “because the assertion of a sentence with an evidential presupposition trigger ultimately amounts to the prejacent itself.” (D. Lim 2010: p. 97) However, I disagree with his judgement on (67). I cannot see any meaningful difference between (66) and (67). Although I do not agree with his judgment on these data, his proposal should be considered seriously. K. Chung (2010) and D. Lim (2010) arrive at the opposite conclusion depending on similar data.

Faller (2006) shows that Reportative evidentials in Cuzco Quechua have two contradictory properties: (i) the Reportative evidentials can be licensed by rhetorical relations such as *Narration*, *Result* (This is related to D. Lim’s (2010) intuition about the Korean Reportative evidential). (ii) The Reportative evidential *-si* can be felicitously used even when the speaker believes that the prejacent is false (This is related to K Chung’s (2005) intuition on the Korean data). Faller (2006) tried to give a unified analysis using SDRT but she did not relate her analysis to presupposition. In this dissertation, I will explain this by presupposition theory of SDRT in chapter 4. In sum, the Korean evidential *tay* behaves differently from epistemic modals because *tay* can felicitously be used when the truth or falsity of the prejacent is already known and thus is not an epistemic modal.

3.2.2 Evidentiality under the Illocutionary Analysis

3.2.2.1 Faller 2002

Faller (2002) analyzes three enclitics, *-mi*, *-si*, *-chá* in Cuzco Quechua in detail and offers the analysis of evidentiality based on speech act theory inspired by Searle and Vanderveken (1985). Her basic idea is that the three enclitics above are both evidentials and illocutionary operators. According to her, *-mi* is an illocutionary operator that modifies the sincerity condition of simple speech acts by adding the source of the information.

$$\begin{array}{lll} (68) & -mi: \text{assert}(p) & \Rightarrow \text{assert}(p) \\ & \text{sinc} = \{\text{Bel}(s, p)\} & \text{sinc} = \{\text{Bel}(s, p), \text{Bpg}(s, \text{Bel}(s, p))\} \end{array}$$

Under the illocutionary analysis, evidentials are functions from speech acts to speech acts. In (68), *-mi* is a function that takes the illocutionary act associated with assertions, which has the sincerity condition that the speaker believes the proposition *p* as its argument and outputs the illocutionary act of assertion which adds up sincerity condition that the speaker has the best possible grounds from the encoding information.

$$\begin{array}{lll} (69) & -si: \text{assert}(p) & \Rightarrow \text{present}(p) \\ & \text{sinc} = \{\text{Bel}(s, p)\} & \text{sinc} = \{\exists s_2(\text{Assert}(s_2, p) \wedge s_2 \notin \{h, s\})\} \end{array}$$

The Reportative enclitic *-si* is used when the speaker says what (s)he has heard from someone else. *-Si* is function from a speech act of assertion into a speech act of presentation by which a speaker plays a role of channel of communication between the source and the addressee.

Accordingly, a speaker does not commit herself to the truth or falsity of the prejacent. In addition, all *-si* sentences have in common is that the speaker brings the embedded proposition into the conversation for consideration. That is, the current speaker's speech act is the presentation of another speaker's assertion (Faller 2002). Thus, Faller argues that *-si* does not express an assertive point and cannot be captured by any of basic speech acts assumed in the literature.

3.2.2.2 Distributional Diagnostics

Recall the basic structure of Korean verbs in section 2.1.1. Korean verbal suffixes can be classified into two groups based on their distribution in the verbal complex: non-terminal suffixes and terminal suffixes. A verbal stem always occurs with a terminal suffix and arbitrarily take non-terminal suffixes. We should pay attention to the terminal suffix here in that it is specified as sentence types (See 2.1.4) and illocutionary force. Consider (70), repeated from the example (2).

(70) ku-pwun-i cap -hi -si -ess-ess -keyss -sup -ti -kka?

The-person.HON-NOM catch -A -B -C -D -E -F -G-H

'Did you think that he had been caught?'

The suffixes are: passive (A), subject honorific (B), Anterior(C), past or perfect (D), conjectural modal (E), addressee honorific (F), retrospective mood (G), and interrogative sentence type (H).

Though the slot (G) cannot represent all three evidentials in this study, it is relatively clear that evidentials can be separated from the terminal suffix.

(71) a. Younghee -ka namtongsayng pang-lul chiwu -te-la.

Younghee-Nom brother room-Acc clean -Ev-Dcl

‘(Based on what a speaker saw) Younghee cleaned her brother’s room’

b. Younghee -ka namtongsayng pang-lul chiwu –ess- tay-ni?

Younghee-Nom brother room-Acc clean -Ant-Ev-Int

‘(Based on what an addressee heard) Did Younghee clean her brother’s room?’

Recall that there are two types of evidentials cross-linguistically (Murray 2010): illocutionary evidentials (e.g., Faller 2002) and epistemic evidentials (Izvorski 1997; Matthewson et al. 2007). Specifically, illocutionary evidentials have been analyzed under speech act theory, while epistemic evidentials have been analyzed as modals. As mentioned in 2.1.4, *ci* is one of the sentence-terminal suffixes in Korean and can be used in various sentence types such as declarative, imperative, interrogative, and propositive by itself. If we only consider the evidential *ci*, Korean evidentiality may be accounted for under speech act theory. On the other hand, the Korean verbal complex system shows that at least two other evidentials such as *te* and *tay* are syntactically different categories in that they can be separated from the sentence-terminal suffix. As indicated in the end of chapter 1, any theories which assume uniform categories for evidentiality face the same problem. In contrast with Korean evidentials, an independent slot is reserved for an evidential in Cheyenne suffix system.

(72)	I	II	III	IV	V	VI	VII	VIII	IX
	person-temporal-(directional)-(prefix ⁺)- root-(suffix ⁺)-[voice]-arguments ⁺ -mood								
	1	PST	TRL	neg	see	cause	SO	3PL.A.OBV	RPT
	2	FUT	CIS	again	give.up	be	OS	2PL	IMP

3 PRS/REC back sing by.hand 1:2 3PL.B Y/N

(Murray 2010: p.12)

According to Murray (2010), there are 4 types of evidentials in Cheynne. One of them is an unmarked Direct evidential and three overtly marked ones are Indirect evidentials³⁴. Cheynne data demonstrate that these evidentials, which are classified as illocutionary evidentials by Murray (2010), are part of the verbal complex. Interestingly enough, the basic structure of Cheynne verb complex is similar to that of Korean in that it consists of a verb stem and suffixes and should occur with a terminal suffix and arbitrarily take non-terminal suffixes. There are two possible options for the last mood slot: evidentials or illocutionary mood marker such as a polar interrogative marker, imperative or optative markers among others (Murray 2010). Cheynne evidentials can also occur in polar questions.

(73) a. Mó = é-néméne-Ø?

y/n = 3-sing-dir

³⁴ Here are the examples evidentials in Cheynne below from Murray (2010: p. 21) and all data are quoted from Leman (1980).

- a. É-hoo 'koho-
3-rain-DIR
'It's raining, I'm sure.'
- b. É-hoo 'kohó-nese
3-rain-RPT.SG.B
'It's raining, I hear.'
- c. É-hoo 'kohó -neho
3-rain-NAR.SG.B
'It rained, it is said.'
- d. Mó-hoo 'kohó-hane-he
CNJ-rain-MOD_B-Y/N
'It's raining, I gather.'

‘Given what you know, did he sing?’

b. Mó = é-néméne-séstse?

y/n = 3-sing-RPT.3SG

‘Given what you heard, did he sing?’

(Murray 2010: p.22)

The data presented in (73) demonstrate the significant difference between Korean and Cheyenne evidentials. Cheyenne evidentials always occur in the position of terminal suffix. Korean evidentials can occur in the position of terminal suffix but not always.

3.2.2.3 Embeddability

It is well known that illocutionary evidentials cannot occur in subordinate clauses such as the antecedents of conditionals and relative clauses (Faller 2002; Murray 2010). This constraint arises due to the morphosyntactic features of the Korean verbal complex system again. According to H. Lee (1991), Korean terminal suffixes can be divided into two groups: sentence-terminal suffixes which show the speaker’s attitudes toward the content of the attached clause and clause-final suffixes which indicate clausal relations with other parts of the text such as attributive suffixes and connectives. We already introduced the former group in 2.1.1, however I need to present some background on clause-final suffixes.

- (74) a. Joon-i pay-lul mek-ess-ta
 Joon-Nom pear-Acc eat-Ant-Dcl.
 ‘Joon ate a pear.’

- b. [Joon-i Ø_i mek-un] pay_i-ka ssek-ess-ta
 Joon- Nom eat-Adn pear-Nom rotten-Ant-Dcl
 ‘The pear which Joon ate was rotten’

In (74a), the verb takes a sentence final suffix, i.e. the declarative suffix *ta*, while in (74b), the verb under the relative clause takes the attributive suffix *un*. Although there are some suffixes which play both the role of sentence-terminal and clause-terminal suffix in Korean, in most case sentence-terminal suffixes cannot occur in subordinate clauses. As shown by data in (74), the prediction based on the feature of illocutionary evidentials is that attributive suffixes occupy the last slot for the final suffixes including evidentials, and thus illocutionary evidentials cannot occur in the subordinate clauses.

- (75) [Ecey nay-ka Ø_i mek-te-n] pay_i-ka mas-i coh-ass-ta
 Yesterday I-Nom eat -Ev-Adn pear-Nom taste-Nom good-Ant-Dcl
 ‘The pear which I ate yesterday tasted good.’

In (75), the basic syntactic structure is similar to (74b) in that the verb stem in the relative clause combines with an attribute suffix. The only difference between them is that the Korean evidential *te* occurs in relative clauses. The example in (75) is perfectly acceptable to Koreans but the reasons why we are intrigued with it are two folds. The example in (75) shows that Korean evidentials can syntactically be embedded in subordinate clause like relative clauses. Based on this observation, the proposal that the Korean evidential is a kind of illocutionary evidential is rejected. More interesting issues can be found in the semantic and pragmatic perspective. In short, the meaning of and constraint on *te* stemming from evidentiality are encapsulated when *te* occurs

in the relative clause. Specifically, the basic meaning of *te* – directly acquired information – and its first person effect – a speaker should not play an active role – disappears under the relative clause.

(76) a. **ku tangsi shakespeare-ka ce cip-ey sal-te-la.*

that time Shakespeare-NOM that house-LOC live-S.PAST-DEC

‘Shakespeare was living in that house at that time.’

b. *ce cip-i ku tangsi shakespeare-ka sal-te-n kos-i-ta.*

that house-NOM that time Shakespeare-NOM live-S.PAST-ATT place-be-DEC

‘That house is the place where Shakespeare was living at that time.’

(K. Chung 2010: p.19)

Examples in (76) are old puzzles among traditional Korean linguists. As shown in K. Chung (2005), (76a) is not acceptable because the evidential content of *te*, that the speaker witnessed Shakespeare living in that house, conflicts with the background knowledge. On the other hand, the example in (76b) is acceptable because its evidential content disappears.

(77) *Younghee-ka/??nay-ka nolay-lul pwule-te-la.*

Younghee-Nom/I-Nom song-Acc sing-Ev-Dcl

‘[speaker saw] Younghee/I sang a song.’

An example in (77) shows that the evidential *te* has restriction on the subject, i.e. a speaker cannot correspond to a subject working as an active role in the event. If we turn our attention to *te* under the relative clause in (75), it is clear that a restriction on the subject is lifted. In sum, *te* in the

relative clause loses the characteristics of an evidential. Based on the above observation, some traditional Korean linguists argued that *ten*, the combination of *te* and attributive suffix *n*, do not relate to *te*. However, we believe that *ten* originally comes from *te* and trapping in presupposition theory can explain these data. We will go back to this issue in the next section.

The evidential *te* can occur under the scope of another subordinate clause. In 3.2.1.2, the Korean connective *myun*, which takes the antecedent of a conditional under its scope, has been discussed but only evidentials in the consequent were analyzed. Now we consider its antecedent. As far as I know, there is only one possible combination for an evidential under the antecedent like the example in (78)³⁵.

- (78) Dayho-lel ilccik ptengwen-ulo olmki-ess-te-lamyen, salli-l swu i-ess-ta.
 Dayho-Acc quickly hospital-Loc bring-Ant-Ev-Con save a life-Adn DN be-Ant-Dcl
 ‘If Dayho had been quickly brought to a hospital, his life would have been saved.’

We will discuss this example in (78) in detail in the next section. For the purpose of the current section, there are at least two points we can clarify. First, *te*, as opposed to illocutionary evidentials, can syntactically be embedded in the antecedent of conditionals. Based on this, we

³⁵ Strictly speaking, this sentence has a counterfactual interpretation in its antecedent. This is not compatible with the proposal above that *myun* does not have an irrealis meaning. It is problematic. However, we believe that Condoravdi (2002) can shed light on it. Condoravdi (2002) proposed that the interpretation of counterfactuals is the result in interaction between modals and tense. Related to (80), roughly speaking, Past perspective with a future orientation (counterfactual reading) occurs when the perfect takes scope over the modal. In other words, the reference time set by the modal is an interval starting at some past time still with a future orientation. One problematic factor of Condoravdi (2002) is that there is a gap between syntactic compositionality and semantic interpretation. It is not predictable from her theory that the modal (a conditional connective) takes scope over the perfect (*ess*) in counterfactual reading like (78). To solve this problem, she offered the account that perfect can undergo movement to a position above that of the modal in her analysis. In sum, counterfactual meaning arises not directly from *myun* but from the interaction between modal and tense.

In contrast with Korean evidentials, illocutionary evidentials are not embeddable syntactically and semantically in the subordinate clauses such as antecedents of conditionals, complements of verbs, and relative clauses (Murray 2010). As shown below in (79), any evidential enclitics Cuzco Quechua cannot occur in the antecedent of a conditional.

(Faller 2002: p. 221)

In this section, Korean evidentiality will be discussed under the frame of presupposition theory. Even other competing theories like illocutionary analysis (Faller 2002; C. Davis et al. 2007 among others) or epistemic modal analysis (Garrett 2001; McCready and Ogata 2007 among others) assume that presupposition is appended in the process of encoding the information source. Why did these researchers choose the other options instead of presupposition theory? At least one answer is prepared: the direct relation between presupposition and evidentiality has proved difficult to establish. The traditional way to distinguish the presupposition from the assertion is to test the presupposition projection: Presupposition tends to survive under semantic operators such

as negation, modality and the antecedent of conditionals. However, not all illocutionary evidential be tested under the antecedent of conditionals as shown in section 3.2.2, mainly because of syntactic constraints. Moreover, in some languages, the standard tests for presupposition cannot be applied to the evidentiality (Faller 2002; McCready and Ogata 2007). In fact, the limit to the standard test is well known (Beaver 2001). *Too* in English, for example, is treated as a presupposition trigger but any standard test cannot be applied.

In this subsection, I propose that the core theoretical relation between evidentiality and presupposition is centered on accommodation. We will try to overcome the barriers mentioned above. The most intriguing phenomenon related to presuppositional analysis is trapping. Trapping helps us understand the projection problem of presuppositional evidentials.

3.2.3.1 The Projection Problem of Evidentials

Presupposition projection may be the most controversial characteristic of presupposition theory (Beaver 2001). In the early stage of the theory, the presupposition projection simply works as a test to distinguish the presupposition from the assertion. Specifically, presupposition tends to survive under embeddings such as negation, modality and the antecedent of conditionals³⁶. A major advance in dealing with presupposition projection came with the development of Dynamic Semantics related to updating the context (Stalnaker 1974; Karttunen 1974; Heim 1983). The observation that presupposition projection is related to the type of predicates and logical operators which take the scope of the presupposition triggers and it was accounted for by the famous theory of *holes*, *plugs* and *filters* by Karttunen (1973). He subgrouped different predicates and sentential

³⁶ According to Simon et al. (2010), “an implication projects if and only if it survives as an utterance implication when the expression that triggers the implication occurs under the syntactic scope of an entailment-cancelling operator.” This definition considers the general projections including presupposition and conversational implicature.

operators according to their degree of allowing presuppositions to project out. Subsequently, *holes* including negation, modal operators and factive predicates, always allow projection. *Plugs*, including verbs such as *say*, *state*, and *think* never do. The most interesting cases are filters. Logical connectives such as conjunction and conditionals allow projection and sometimes do not. Moreover, through further studies on presupposition (Geurts 1999), it was recognized that the projection problem of complex sentences just paved the way for a much bigger issue: how to interpret the presuppositional content in context.

- (80) a. It isn't Betty who kissed Fred – in fact, Fred wasn't kissed at all.
 b. It's possible that it's Betty who kissed Fred, but it's also possible that he wasn't kissed at all.

(Geurts 1999: p. 20)

It has been agreed in general that *it*-cleft convey semantic presuppositions like 'somebody kissed Fred' in (80) (Gazdar 1979; Zeevat 1992). However, the examples in (80) show that *it*-cleft presuppositions cannot project out because of the updated context later. This observation leads to the conclusion that there is no systematic way of dealing with presupposition triggers because any induced presupposition can be prevented from projecting by contextual manipulation. Although I discussed the limitations of the standard tests above, they are still considered as evidence for whether constructions are counted as presupposition or not.

As shown in 3.1.1, all three Korean evidentials take scope over the negation. Negation cannot be construed as negating the indirect status of the evidence, and only propositional content is under the scope of the negation.

(81) Chulswu-ka Tayho-hako ecey sojwu-lul an masi-te-la.

Chulswu-Nom Tayho-Com yesterday liquor-Acc Neg drink-Ev-Dcl

‘Chulswu and Tayho didn’t drink sojwu yesterday.’

ev= (i) A speaker has direct evidence that Chulswu and Tayho didn’t drink sojwu yesterday.

(ii) # A speaker does not have direct evidence that Chulswu and Tayho didn’t drink sojwu yesterday.

An example in (81) satisfies one of the conditions which may treat Korean evidentials as presupposition. However, this is exceptional. In many cases, the standard test cannot be applied to an evidential. For example, two Korean evidentials – *ci* and *tay* – cannot be tested under an antecedent of conditionals because of their syntactic constraints.

(82) Dayho-lul ilccik pengwen-ulo olmki-ess-te-lamyen, salli-l swu i-ess-ta.

Dayho-Acc quickly hospital-Loc bring-Ant-Ev-Con save a life-Adn DN be-Ant-Dcl

‘If Dayho had been quickly brought to a hospital, his life would have been saved.’

The evidential *te* can occur under the scope of the connective *lamyun* which takes the antecedent of the conditional in (82). The most interesting feature of this example is that the evidential content of *te* is cancelled under the antecedent of the conditional. Specifically, we cannot see the evidential content from (82) that ‘the speaker saw Dayho being brought to the hospital.’ Presuppositions can survive but sometimes cannot when they are embedded in the antecedent of a conditional. This is compatible with the behavior of Korean evidentials.

3.2.3.2 Trapping

There is general consensus that presupposition can be satisfied in the context but satisfaction failure does not lead to an instant crash of the interpretation process. Informally speaking, if the previous context cannot satisfy the presuppositions, it may be adjusted through accommodation (Karttunen 1974; Lewis 1979). I will review anaphoric presupposition theory by van der Sandt (1992) in chapter 4 and thus introduce a simplified picture related to the current subsection.

According to van der Sandt (1992), the procedure of resolving presuppositions is divided into two stages. In the first stage, preliminary DRSs, which exist but are not interpreted yet, are constructed for presuppositions represented under the DRSs where they are triggered. Next, in the second stage, preliminary DRSs are resolved and fully interpreted. Van der Sandt offered two options to resolve presuppositions triggered in a preliminary DRS: binding and accommodation. If an appropriate antecedent exists for the preliminary DRS in the context then the resolution is done by binding presupposition and its antecedent. If the resolution of binding fails, the previous context does not satisfy the presuppositions imposed by the sentence, and it may be adjusted through accommodation: adding the presuppositional content at the proper position in the context. Consequently, final DRSs will thus not contain any unresolved anaphoric expressions and follow the standard interpretation rules of DRT.

Van der Sandt (1992) suggested a few principles (they are neatly explained in Beaver 2001) which constrain the procedure of accommodation. The result of the accommodation should be logically consistent and should be informative to the rest of the DRSs. He also offered that the most superordinate DRS is preferred if the condition of consistence and informativeness are satisfied. Another important constraint on accommodation is that any unbound variable should not be left in the resolved DRSs. If presupposition is prevented from being accommodating at a certain level because of a free discourse referent, it is called trapping.

- (83) a. Someone had a child and *his child* is bold.
 b. If a man gets angry, *his children* get frightened.

(Van der Sandt 1992: p. 339)

As indicated by van der Sandt (1992), a pronoun (*his* in (83a) and (83b)) in the noun phrase which is a presupposition trigger is embedded under the scope of an external quantifier. As a result, projection is not allowed because the discourse referent of the pronoun becomes unresolved due to projection. We can find a little different kind of trapping from the Direct evidential in Korean in that any quantifier is not involved.

- (84) [ece nay-ka Ø_i mek-te-n] pay_i -ka mas-i coh-ass-ta
 yesterday I-Nom eat -Ev-Adn pear-Nom taste-Nom good-Ant-Dec
 ‘The pear which I ate yesterday tasted good.’

In (84), as explained in 3.2.2.3, the meaning and constraint of *te* stemming from the evidentiality is cancelled when *te* occurs in the relative clause. Specifically, the basic meaning of *te* – directly acquired information – and its first person effect – a speaker should not play an active role – disappears in the relative clause. We now have an explanation for why the evidential content of *te* disappears in the relative clause. As shown by Han & Kim (2004), the main verb in a relative clause is inflected with an adnominal morpheme (*n*)*un*, which denotes that the clause is modifying a noun. There is no overt relative pronoun in Korean and thus it is assumed that an empty relative pronoun operator is located in the position of the specifier of CP which is syntactically associated with a gap in the relative clause. In this dissertation, I assume that the gap

in the relative clause is a null pronoun and it is bound by a relative operator and also coindexed with the head noun. Null pronoun under the relative clause is free variable itself (I ate *x* yesterday).

In van der Sandt (1992)³⁷, preliminary DRSs are constructed for presuppositions (evidential content) represented under the DRSs where they are triggered. Because an appropriate antecedent for evidential content does not exist for the preliminary DRS in the context, it should project out by accommodation. However, a null pronoun that is free variable cannot project out. Therefore, the presuppositional content is trapped because free variable in the relative clause should stay in-situ to be bound to the head noun. Trapping is strong evidence that the evidential content triggered by *te* is presuppositional. Other theories related to evidentiality such as modal analysis and illocutionary analysis cannot explain the reason why the evidential content of *te* disappears when *te* occurs in a relative clause.

3.2.3.3 An Anaphoric Resolution by Discourse Markers

Based on Zeevat's (1992; 2002) observation, Geurts & van der Sandt (2004) show that the presuppositional content of *too* can access to an antecedent which is generally inaccessible to anaphors or presuppositions.

- (85) a. ??It may be raining on my birthday, and I think it's not fair that it's going to rain on my birthday.
- b. ??I suspect that Betty was considering taking karate lessons, and she has stopped taking karate lessons.
- c. Fred may be staying at the Ritz, and Barney is at the Ritz, too.

³⁷ We will take a close look at his theory in chapter 4.

d. I suspect that Fred is staying at the Ritz, and Barney is at the Ritz, too.³⁸

(Geurts & van der Sandt 2004)

As indicated by Geurts & van der Sandt (2004), (85a, b) seem to be infelicitous. This is basically related to modal subordination. A modal operator or attitude verbs can evoke the possible world and the referents within the possible world cannot introduce an anaphoric linking within the real world, in the second sentence. Particularly, the gap between two worlds does not permit the discourse referent for the event (*raining* or *taking karate lessons*) in the unmodalized sentence to link the antecedent of the presupposition. However, the presupposition induced by *too* can be linked to the antecedent in (85c, d) and we thus conclude that *too* has a mechanism of the recovery of an anaphoric link. McCready & Ogata (2007) reported similar phenomenon related to Japanese evidentials and discourse markers.

(86) a. ookami_i-ga kuru kamosirenai. # Ø_i anata-o taberu nitigainai.

wolf-Nom come might. Ø you-Acc eat surely

‘A wolf_i might come in. It_i would eat you first.’

b. ookami_i-ga kuru kamosirenai. sosite Ø_i anata-o taberu nitigainai.

wolf-Nom come might. Then Ø you-Acc eat surely

‘A wolf_i might come in. It_i would eat you first.’

(McCready & Ogata 2007)

The examples in (86) are the Japanese version of modal subordination and they show the

³⁸ I deleted the focus marking from the sentences because a focus is not related to current subsection.

sequence of ‘might – would’ in the corresponding English example. Thus we expect that it would be felicitous. However, shown in (86a), the Japanese translation is infelicitous. McCready (2005) and McCready & Ogata (2007) explain that the Japanese necessity modal *nichigainai* has evidential content that is not resolved in the previous context based on the assumption that the prejacent of *nichigainai* must be followed by an inference from contextually supplied evidence. On the other hand, from (86b), McCready (2006) observed that the sequence of a modal and an evidential in Japanese is felicitously accepted if a discourse marker, *sosite*, is used. *Sosite* plays the role of satisfying an anaphoric resolution of evidential content of *nichigainai*.

(87) a. *ili_i-ka i ancang-ey tuleo-l swu iss-e. #Ø_i ne-lul capamek-ci.*

wolf-Nom this mountain retreat –Loc come-Adn DN exist-Dcl. Ø you-Acc eat-Ev

‘A wolf_i might come in this mountain retreat. It_i must eat you.’

b. *ili_i-ka i sancang-ey tuleo-l swu iss-e.*

wolf-Nom this mountain retreat –Loc come-Adn DN exist-Dcl

kulemyen Ø_i ne-lul capamek-ci.

Then Ø you-Acc eat-Ev

‘A wolf_i might come in. Then, it_i must eat you.’

In Korean examples in (87), when utterance with the inferential evidential *ci* follows utterance with epistemic modal *swu iss*, the antecedent for evidential content of *ci* is lost. This is predictable from Japanese data. Moreover, McCready & Ogata (2007) have shown that the Japanese inferential evidential attested in modalized contexts is resolved by an anaphoric link generated by a discourse marker but also that evidentials whose content should project out behave differently.

For example, the evidential content of *hazu* cannot be resolved by the presence of a discourse marker. Relatedly, recall that three types of Korean evidentials are allowed to occur in the consequent of the conditional but show various ranges of scope. Specifically, the Direct and Reportative evidentials invariably project out their content from the conditional but the inference evidential limits its content under the consequent.

- (88) ??ili_i-ka i sancang-ey tuleo-l swu iss-e.
 wolf-Nom this mountain retreat –Loc come-Adn DN exist-Dec.
 kulemyen Ø_i ne-lul capamek-nun-tay.
 Then Ø you-Acc eat-Prs-Ev
 ‘A wolf_i might come in. Then, (it is said that) it_i must eat you.’

In contrast to the Korean inferential evidential, *tay* usually projects out in the complex sentences. The evidential content of *tay* cannot be resolved by the presence of a discourse marker in (88).

3.2.3.4 Global Accommodation and Intermediate Resolution

I have shown some phenomena which support the argument that presuppositional analysis contributes an account of Korean evidentials in the previous subsections. However, there is still one remaining issue for a presuppositional analysis of Korean evidentials. The current presuppositional analysis lacks one important feature of what is typically taken to be Korean evidentials. Recall that K. Chung (2005) proposed that *te* is a ‘deictic past tense marker’. Relatedly, D. Lim’s (2010) presuppositional analysis of *tay* hinges on the Kaplanian theory of indexicals. These studies convincingly showed that the speaker-dependency of evidentiality is explicitly associated with the speaker-dependency of indexicals.

At first glance, it seems quite plausible that Korean evidentials might indeed be indexicals. However, considering two-dimensional view by Kaplan (1989)³⁹, I have some reasons to worry that it is not the right approach to Korean evidentials. First, interrogative flip supports the presence of monster in contrast with the argument by Kaplan that natural language is monster-free. This argument is supported by is interrogative flip in 3.1.3. Recall that *tay* and *te* in both content and polar questions forced interrogative flip. The following example shows that the speaker-dependency of evidentials shifts when they are used in question.

(89) a. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-tay.

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev

‘Chulswu and Tayho drank sojwu yesterday.’

ev= A speaker has reportative evidence that Chulswu and Tayho drank sojwu yesterday.

b. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-tay-ni?

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev-Int

‘Did Chulswu and Tayho drink sojwu yesterday?’

ev= An addressee has reportative evidence that Chulswu and Tayho drank sojwu yesterday.

Second, Korean evidentials are not always rigid in the sense that they may be affected by semantic operators such as conditionals and modals. This observation conflicts with Kaplan’s

³⁹ A theory of indexicals outlined by Kaplan (1989) is dubbed two dimensional semantics because the character, a function from contexts to semantic contents, and content, a function from possible worlds to extensions, are separated in his system. In his system, character cannot interact with content and indexicals cannot be affected by linguistic operators.

argument that indexicals like *I, here, now* are semantically rigid because they always pick their referents directly from the context. My concern here is with examples such as (90a, b) and (90c) that involve crucial contrast.

(90)

a. Yongswu-wa Minci-ka mana-n cek-un eps-e.

Yongswu-Com Minci-Nom meet-Adn DN-Top Neg-Dcl

Yongswu-wa Minci-ka manna-myen ssawu-te-la.

Yongswu-Com Minci-nom meet-if fight-Ev-Dcl

‘Yongswu have never met Minci. The speaker observed that Yongswu and Minci fight when they meet.’

b. Yongswu-wa Minci-ka mana-n cek-un eps-e.

Yongswu-Com Minci-Nom meet-Adn DN-Top Neg-Dcl

#Yongswu-wa Minci-ka manna-myen ssawu-n-tay.

Yongswu-Com Minci-nom meet-if fight-prs-Ev

‘Yongswu have never met Minci. I heard that Yongswu and Minci fight when they meet.’

c. Yongswu-wa Minci-ka mana-n cek-un eps-e.

Yongswu-Com Minci-Nom meet-Adn DN-Top Neg-Dcl

Yongswu-wa Minci-ka manna-myen ssawu-ci.

Yongswu-Com Minci-nom meet-if fight-Ev

‘Yongswu have never met Minci. It is certain that Yongswu and Minci fight if they meet.’

In 3.2.1.2, I demonstrated that there two different types of conditional markers exist in Korean; *myen* and *tamyen*. With respect to the particle *myen*, I argued that it can be used with any type of speaker attitude, e.g. *realis* and *irrealis*⁴⁰. According to Gillies (2011), the choice between *realis* and *irrealis* can depend on pragmatic mechanism. This is the way it works. If the previous context licenses the antecedent of conditionals (p), *realis* is updated. On the other hand, if the previous context (\neg p) does not license an antecedent of conditional (p), *irrealis* is chosen. The latter case can offer an account of examples in (90). As shown in (90), the three types of Korean evidentials are allowed to occur in the consequent of conditional but show different ranges of scope. In particular, Direct and Reportative evidentials are not affected by conditionals and can project out their content from the conditional. As a result, the utterances with evidentials are infelicitous due to contradiction. In contrast, the Inference evidential limits its content under the conditional and the previous context cannot interact with *irrealis*.

Recall that the Direct evidential *te* combined with tense and modal markers like *ess* and *keyss* conveys an Inference evidential interpretation. K. Chung (2005) and J. Lee (2011) pay attention to the Direct evidential *te* because *te* in the absence of other TAM markers like *ess* and *keyss* conveys a Direct evidential interpretation. In contrast, they commonly demonstrate that the Direct evidential *te* combined with TAM markers conveys an Inference evidential interpretation.

- (91) Yongswu-wa Minci-ka mana-n cek-un eps-e.
 Yongswu-Com Minci-Nom meet-Adn DN-Top Neg-Dcl
 Yongswu-wa Minci-ka -ka manna-myen ssawu-keyss-te-la.
 Yongswu-Com Minci-nom meet-if fight-Mod-Ev-Dcl

⁴⁰ Here I assume that the characteristic of indicatives, the term used by Gillies (2011), corresponds to the discourse behavior of Korean particle *myun*.

‘Yongswu have never met Minci. It is certain that Yongswu and Minci fight if they meet.’

Compare (91) with (90a). Indicated above with regard to (90a), its evidential content is not blocked by conditionals and can project out. Thus, the utterances with the Direct evidentials are infelicitous due to contradiction. In contrast, the Direct evidential combined by a modal limits its content under the conditional, so (91) is felicitous.

As we have seen in this subsection, the Kaplanian theory of indexicals cannot account for Korean evidentials. In particular, it cannot explain the reason that Korean evidentials shift from being from speaker-anchored to being addressee-anchored in question and that they sometimes interact with other semantic operators. While I disagree on the two-dimensional view by Kaplan (1989), I believe that Korean evidentials behave like evidentials. On the other hand, Hunter & Asher (2005) paid attention to problematic cases of Kaplanian theory. Their main claim is that indexicals are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. Hunter & Asher (2005), I believe, can explain the reason that Korean evidentials such as *te* or *tay* should be anaphorically resolved in the most global context but not always. Let's take a look at their idea.

Hunter & Asher (2005) proposed that English *actual* plays a role of a modal operator (\uparrow) that forces the resolution of presuppositions in the real world. In the examples of (92), this operator isolates out the presupposition triggered by a definite description and resolves the presupposition: either bound or accommodated.

- (92) a. If someone other than George Bush had won the election, the actual President would have been really angry.
- b. If John Kerry had won the election, the actual President would have been a democrat.

(Hunter & Asher 2005)

In (92a), *actual* determines the scope of resolution for the presupposition as the most global context, that is, the outermost DRS. and the global context is always relevant to the context of utterance such as a speaker, time, and world. On the other hand, in (92b), the interaction of the indexicals and semantic operators is allowed here, if the pragmatic constraints are met. If the presupposition finds an acceptable antecedent in intermediate level, it is bound to it. If it not, but accommodation is available. Moreover, Hunter & Asher (2005) suggested a special type of operator (\uparrow) which is rigidly fixed to presuppositional content in lexical level and it is always resolved in the outmost DRS. They also argued that English *I* can be forced by \uparrow .

3.3 Conclusion

In this chapter, I claimed that Korean evidentials are presupposition triggers. To confirm the Korean evidential system proposed in chapter 2, I provide various tests such as negation, challengeability and the interrogative flip. All the tests support for classifying Korean evidentials as the same category. In particular, while the propositional content embedded under the scope of negation cannot project out, the evidential content can. I showed all three types of Korean evidentials always take over negation. Moreover, challenging the evidential content cannot be accepted and only propositional content is agreed with or rejected. Lastly, interrogative flip can be applied to *tay* and *te* in both content and polar questions, however, *ci* shows different interpretation depending on question types. As discussed by Murray (2010), negation and challengeability tests are relevant to the notion of at-issueness. In a nutshell, not-at-issue content is not interacted with semantic operators such as negation or modals and not challengeable. On

the other hand, interrogative flip is the evidence that some evidentials are indexicals. I will go back to this in chapter 4.

Many researchers agree that there are at least two types of evidentials cross-linguistically: illocutionary evidentials (Faller 2002; Murray 2010) and epistemic evidentials (Izvorski 1997; Matthewson et al. 2007). Illocutionary evidentials have been discussed under speech act theory, whereas epistemic evidentials have been analyzed as modals. However, any one of these analyses cannot fully account for Korean evidentiality because Korean evidentials are not subsumed under a uniform morpho-syntactic category. For example, *ci* is a sentence-terminal suffix in Korean and can be used in various sentence types. If we only consider the evidential *ci*, Korean evidentiality may be accounted for under speech act theory. On the other hand, if we consider the fact that *te* is TAM marker in Korean, *te* should be analyzed as epistemic evidentials.

Hence, I propose that a presuppositional analysis can account for Korean evidentiality in that presuppositions can appear in various syntactic constructions and lexemes from different syntactic categories. I showed some empirical evidences in this chapter to support my argument. Specifically, Korean evidential content can survive but sometimes cannot when they are interacted with semantic operators. This is compatible with the behavior of presuppositions. I also showed that both binding and accommodation can be applied to Korean evidentials similar to presuppositions via modal subordination and trapping respectively. Lastly, I introduced PI to explain the reason of projection problem of Korean evidentials.

Chapter 4

The Discourse Relations of Korean Evidentials

In this chapter, my main concern is the formal analysis of Korean evidentiality. I propose that Korean evidentiality can be accounted for under binding theory of presupposition (van der Sandt 1992; Asher & Lascarides 1998; 2003). Asher & Lascarides (1998) is an extension of the anaphoric presupposition theory by van der Sandt (1992). However, they present the feature of the theory which distinguishes itself from the original binding theory. Asher & Lascarides' (1998) proposal erases the distinction between presuppositions and accommodation in the sense that both of them are licensed when they are related in the discourse structure. In SDRT account of presuppositions by Asher & Lascarides (1998), presuppositions are represented as their own SDRSs and attached to the previous context through limited kinds of rhetorical relations. In particular, Asher & Lascarides (1998) regard presupposition resolution as an integrated part of the task of building discourse relations such as *Background* and *Defeasible Consequence*.

I also propose that Presuppositional Indexicals (PI) by Asher & Hunter (2005) and Hunter (2010) has to be added to SDRT to reflect some important features in the Korean data based on that Korean evidentials are associated with the speaker-dependency of indexicals. Inspired by Hunter & Asher (2005), I argue that Korean evidentials are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. Hunter & Asher (2005) offer a formal analysis for modeling the behavior of Korean evidentials.

This chapter is organized as follows. In section 4.1, I offer main motivations of dynamic semantics and SDRT to account for Korean evidentiality. Based on the empirical evidence, I argue that Korean evidentiality is a genuine discourse phenomenon. In section 4.2, I review and compare two different theoretical frameworks of presuppositions: Satisfaction theory and

Anaphoric presupposition theory. Two theories make a different prediction with regard to the common ground. Under Satisfaction theory, the common ground is mutually assumed to be taken for granted and not subject to new information. In the case of the Binding Theory, sentences can properly be uttered in a context where it is not already part of the common ground. I also introduce presuppositional analysis by Asher & Lascarides (1998) in the basis of SDRT. In section 4.3, I analyze Korean evidentials and show their representations under SDRT.

4.1 Korean Evidentiality: Discourse Phenomenon

In the field of formal semantics, a family of new semantic theories of discourse structure was established which includes Discourse Representation Theory (Kamp 1981; Kamp & Reyle 1993) File Change Semantics (Heim 1982), Discourse Predicate Logic (Groenendijk & Stokhof 1991) among others. These theories are dubbed dynamic semantic theories⁴¹. Dynamic semantics has led to an important shift in paradigm from the Montagovian view, which primarily devotes the attention of semantic theory to reference and truth conditions, to a perspective in which the central concept is information state or context change potential (Kamp 1981; Heim 1983). In particular, following terminology from DRT, an utterance representation is integrated into the interpretation of the preceding context and the represented utterances can be updated with additional information provided by each successive utterance. As shown in Lascarides & Asher (2002), another important motivation of dynamic semantics is that it leads naturally to an integration of the semantic effects of discourse structure on the interpretation of discourse.

⁴¹ There is a well-known debate as to whether DRT is a static or dynamic theory in that DRT is not designed to deal with a relation between input contexts and output contexts. The general agreement is that the construction of a context is dynamic, whereas the context itself has a static meaning.

In chapter 3, I demonstrated that Korean evidentiality is a genuine discourse phenomenon, which is primarily related to the first notion of dynamic semantics. Korean evidential content can survive under negation but sometimes cannot when they are interacted with semantic operators such as a conditional. I also showed that accommodation can be applied to Korean evidentials trapping under the relative clause. Moreover, I introduced PI to explain the reason of projection problem of Korean evidentials.

Discourse structure within SDRT also gives contributions to presupposition resolution as an integrated part of the task of building discourse relations. SDRT erases the distinction between presuppositions and accommodation in the sense that both of them are licensed when they are related in the discourse structure. Faller (2006) showed that the Reportative evidentials in Cuzco Quechua have two contradictory properties: (i) the Reportative evidentials can be licensed by rhetorical relations such as *Narration*, *Result*. (ii) The Reportative evidential *-si* can be felicitously used even when the speaker believes that the prejacent is false. Faller (2006) tried to give a unified analysis using SDRT. In sum, adequate semantic theory for Korean evidentiality would benefit from dynamic semantics in the right way.

4.2 Presupposition Theories

4.2.1 Previous Analyses of Presupposition

4.2.1.1 Satisfaction Theory

Katzir & Singh (2010) demonstrate that a number of researchers (Karttunen 1974; Stalnaker 1974; Heim 1983; Beaver 2001 among others) follow the condition on the common ground below.

(93) Context Satisfaction: If sentence ϕ presupposes proposition p , then ϕ may be

used in context *c* only if *c* entails *p*

This condition makes a prediction with regard to the relation between the context and the presuppositions of sentences: presuppositions should not be informative in context. Satisfaction theories -which are so called by Geurts (1996) - commonly assume that the common ground of a conversation is the set of propositions that the participants in the conversation mutually accept as taken for granted. The common ground is composed of the context sets, which are also those worlds where all of the propositions in the common ground are true. The context set is updated when the asserted information is added. If the sentence is accepted by the participants, the proposition it expresses is added to the common ground. The context set is updated by deleting the worlds where this proposition is false and by keeping the worlds in which the proposition is true. Then, the common ground is mutually assumed to be taken for granted and not subject to new information.

On the other hand, Stalnaker (1974) worried about problematic cases like (94) where one might use presupposition triggers to introduce new information. Schlenker (2007) developed his theory from this idea, too.

(94) a. I am sorry that I am late. I had to take my daughter to the doctor.

(Kai von Fintel 2008)

b. If baldness is hereditary, then Jack's son is bald. .

(van der Sandt 1992)

According to von Fintel (2008), in (94a), the speaker uttering the second sentence presupposes that (s)he has a daughter. This observation is problematic for satisfaction theory because it cannot

explain the fact that new information is conveyed here by a presupposition while this sentence is perfectly felicitous. In the case of (94a), the Satisfaction Theory assumes an alternative mechanism which is called accommodation by Lewis (1979)⁴². When new information occurs in the context where it is not the part of common ground, the hearer can choose to repair the context and update that information to the context accordingly.

In (94b), when presuppositions are triggered in the consequent of a conditional, the presuppositions of the entire utterance are predicted by satisfaction theory to be a conditionalized presupposition. This interpretation seems to be too weak compared with our intuitions. The most natural interpretation for (94b) is that ‘Jack has a son and if baldness is hereditary, then Jack’s son is bald’. In this interpretation, the presupposition is globally accommodated. However, the presupposition accommodated in Satisfaction theory predicts the interpretation for (94b) as follows: ‘If baldness is hereditary, then Jack has a son and he is bald’. As a result, we accommodate the intuitively weaker presupposition that ‘If baldness is hereditary, then Jack has a son.’

As shown in 3.2.3.4, the three types of Korean evidentials are allowed to occur in the consequent of conditional but show various ranges of scope. In particular, Direct and Reportative evidentials invariably project out their content from the conditional but the Inference evidential limits its content under the consequent.

(95) a. Dongho-wa Minci-ka manna-myen ssawu-te-la.

⁴² *The Rule of Accommodation for Presupposition*

If at time *t* something is said that requires presupposition *P* to be acceptable, and if *P* is not presupposed just before *t*, then—ceteris paribus and within certain limits—presupposition *P* comes into existence at *t*.

Dongho-Com Minci-Nom meet-if fight-Ev-Dcl

‘A speaker observed that Dongho and Minci fight when they meet.’

b. Dongho-wa Minci-ka manna-myen ssawu-n-tay.

Dongho-Com Minci-nom meet-if fight-prs-Ev

‘A speaker heard that Dongho and Minci fight when they meet.’

c. Dongho -wa Minci-ka manna-myen ssawu-ci.

Dongho -Com Minci-nom meet-if fight-Ev

‘It is certain that Dongho and Minci fight if they meet.’

According to Satisfaction Theory, we can explain the process of updating the Korean evidential *ci* but we cannot explain the remaining evidentials. The reason for this is that the interpretation of the consequent of the conditional is affected by a context that has already been updated with the antecedent of the conditional. In (95c), we first update the initial context *c* with the information in the antecedent of the conditional, by taking those worlds where ‘Dongho and Minci meet’, to *c*’. It works well for the inference evidential because inference evidentials expect that a speaker has made an inference or deduction based on facts other than on a direct observation. The antecedent of the conditionals plays a role of premises. Therefore, we can take a proper interpretation such that ‘It is certain that yongswu and minci fight if they meet.’ However, Satisfaction Theory can not explain why those events, i.e. ‘Dongho and Minci fight when they meet’ appear under the presupposition trigger (*te* or *tay*). Let’s consider the example in (95a). In Satisfaction Theory, we first update the initial context *c* with the information in the antecedent of the conditional, by taking those worlds where ‘Dongho and Minci meet’, to *c*’ again. However the presuppositional

content that ‘a speaker observes that Dongho and Minci fight’ can be interpreted under the previous content. As a result, the final interpretation according to the theory is that ‘when Dongho and Minci meet, a speaker observes that Dongho and Minci fight.’ The result conflicts with native Korean speakers’ intuitions.

4.2.1.2 Anaphoric Presupposition and Accommodation

In Van der Sandt (1992), the basic framework of DRT works as usual in that a new DRS is integrated into the interpretation of preceding DRSs and the whole DRS can be updated with additional information provided by each successive utterance. However, he added a newly introduced type of DRS for presupposition: Preliminary DRSs⁴³.

As a result, the procedure of interpreting presuppositions is divided into two stages. In the first stage, preliminary DRSs are constructed for presuppositions represented under the DRSs where they are triggered. This is not new, because the separation of assertions and presuppositions is familiar in the tradition of presupposition theory since Karttunen and Peters (1979). Van der Sandt’s (1992) innovation is mainly related to the process of the resolution of preliminary DRSs in the second stage. He offered two options for resolving presuppositions triggered in a preliminary DRS: binding and accommodation. If an appropriate antecedent exists for the preliminary DRS in the context, then the resolution is done by binding the presupposition and its antecedent. If the resolution of binding fails, context doesn’t satisfy the presuppositions imposed by the sentence: it may be modified through accommodation: adding the presupposed

⁴³ Krahmer (1998) is the one of the few studies which explored the characteristics of preliminary DRSs. According to him, there are two options for the interpretation of preliminary DRSs. One might argue that preliminary DRSs are proto-DRSs in that their representation is under construction so their interpretation does not affect the other standard DRSs and are not affected by others until their anaphoric element is resolved. On the other hand, one might treat them as ordinary DRSs which do, however, need a special type of interpretation.

content at the proper position in the context. Consequently, final DRSs will thus not contain any unresolved anaphoric expressions and will follow the standard interpretation rules of DRT.

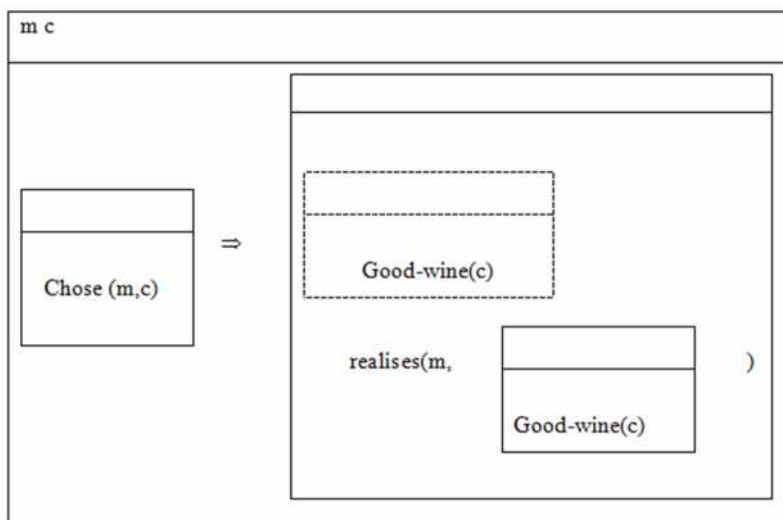
I already demonstrated that accommodation is strongly related to the Korean evidential. Accordingly, we will focus on accommodation here. Let's take a closer look at the resolution of accommodation from Beaver (2001).

(96) If Mary chose the Chateau Neuf, then she realizes it is a good wine.

(Beaver 2001: 104 E125)

Following Beaver (2001), we will use a simplified version of DRT. Item (97) is the DRS of (96) and shows the first stage of van der Sandt (1992) above. In (97), a preliminary DRS is added for presupposition which is represented with dotted boxes.

(97)

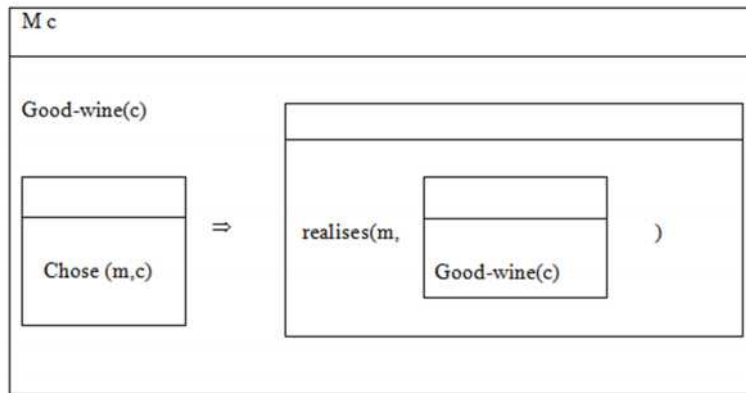


Now we can move to the next step. The presupposition needs to be resolved. Let's assume that no

initial context exists in (97). In such a context, there is no antecedent of the presupposition ‘the Chateau Neuf is a good wine’, so the resolution by binding fails and context can be modified by accommodation.

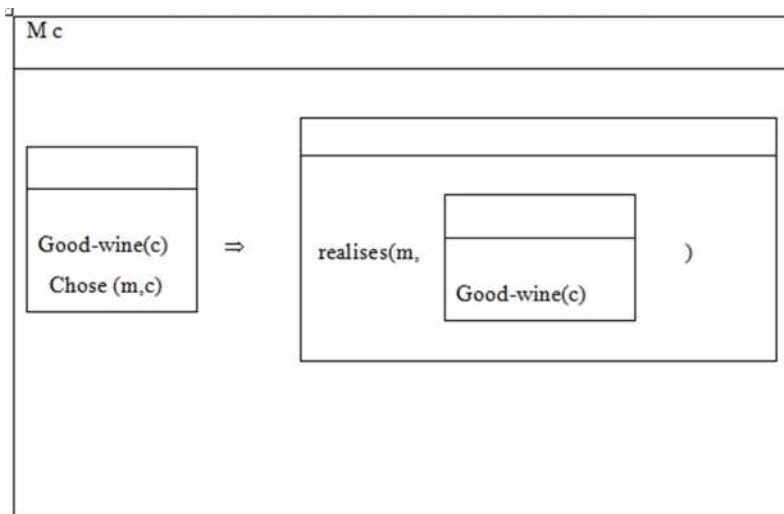
Global accommodation produces (98) which is glossed as ‘the Chateau Neuf is good and if Mary orders it then she realizes it’s good.’

(98)



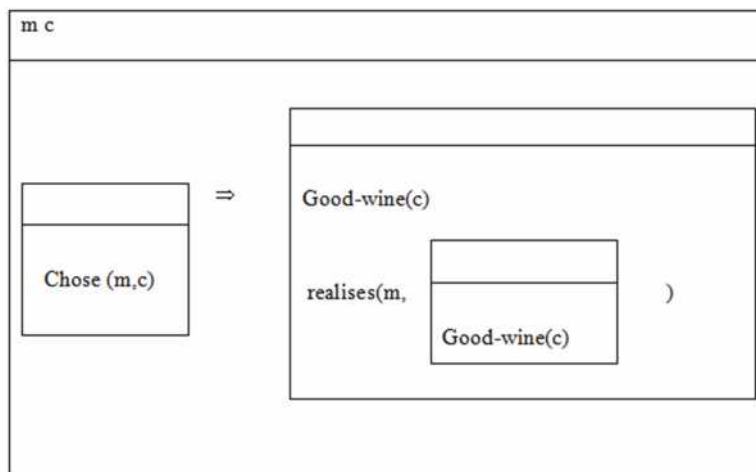
Intermediate accommodation produces (99), which is glossed as ‘If the Chateau Neuf is good and Mary orders it then she realizes it is good.

(99)



Local accommodation produces (100), which is glossed as ‘if Mary orders the Chateau Neuf then it is good and she realizes it’s good.’

(100)



Accommodation is a strong mechanism (Krahmer 1998). Accommodation needs to be constrained

in order to control its power. The result of the accommodation should be logically consistent and should be informative to the rest of the DRSs. van der Sandt suggested that the most superordinate DRS is preferred if the conditions of consistence and informativeness are satisfied. However, sometimes those constraints are not enough. As observed Asher & Lascarides (1998), local accommodation of some cases cannot be explained by van der Sandt (1992).

(101) Either John didn't solve the problem or else Mary realizes that the problem has been solved.

According to Beaver (1996), the second disjunct presupposes that the problem has been solved. Consider van der Sandt's principles of accommodation resolution: the most superordinate DRS is preferred if the conditions of consistency and informativeness are satisfied. In the case of (101), the global accommodation can be picked up. Accordingly, (101) is glossed as 'the problem has been solved, and either John did not solve it or Mary realizes that it has been solved.' However, this is unintuitive. The intuitively proper gloss is that 'Either John did not solve the problem or it has been solved and Mary realizes it has been solved.' This is problematic because the theory wrongly predicts that the most superordinate DRS is preferred.

Based on van der Sandt's theory, let us take a look at the Korean evidentials. Intuitively, Korean evidentials like *te* or *tay* evoke another event as an accommodation such as *seeing* and *hearing*, for example. When these evidentials are allowed to occur in the consequent of a conditional, evidentials invariably project out their content. Accommodation is globally resolved because the conditions of consistency and informativeness are satisfied.

(102) Dongho -wa Minci-ka manna-myen ssawu-ci.

Dongho -Com Minci-nom meet-if fight-Ev

‘It is certain that Dongho and Minci fight if they meet.’

On the other hand, as in (102), the Korean inference evidential *ci* evokes the process of reasoning, which binds the presupposed content to the previous context at the same time. I believe that the core notion of *ci* is strongly connected to nonmonotonicity. It picks out a plausible consequence of the premises in the context, in this case the information contained in the antecedent of the conditional.

The conditional highlights an inferential process that *ci* exploits. And so it requires such a local and defeasible binding. If we appeal only to accommodation or monotonic entailment as binding, I believe we have an evidential version of the proviso problem (Geurts 1999). Van der Sandt’s theory cannot predict this property of *ci*. If we follow his resolution process, we first attempt to bind the evidential content of *ci* to the antecedent but there is no antecedent in the context. Thus we accommodate the evidential content globally. This time there is no constraints to block it. This is not intuitively right. In sum, accommodation is too powerful, so it should be constrained in the right way.

4.2.2 Presupposition Theory in SDRT

Asher & Lascarides (1998) is an extension of the anaphoric presupposition theory by van der Sandt (1992) which introduced the role of world knowledge and rhetorical relations in presupposition resolution. They treat presuppositions within SDRT. The framework of SDRT is an extension of the dynamic semantic theory of DRT which add another level of analysis that handles rhetorical relations such as *Narration*, *Background*, *Elaboration*, *Explanation* and so on (Asher 1993; Lascarides & Asher 2003).

Asher & Lascarides (1998) regard presupposition resolution as an integrated part of the task of building discourse relations. They argued that van der Sandt's (1992) binding theory cannot explain all examples of presupposition because it lacks a richer representation of discourse structure which constrains accommodation properly. On the other hand, van der Sandt's theory has its own principles for handling accommodation. The result of accommodation should be logically consistent and should be informative to the rest of the DRSs, and the most superordinate DRS is preferred if the conditions of consistency and informativeness are satisfied. Asher & Lascarides argue that this is not enough. The upshot of presupposition theory in SDRT is that it can explain the case in which local accommodation is preferred even when global accommodation is not constrained by informativity and consistency conditions. Recall that the inference evidential *ci* does not project out under the consequent of a conditional in contrast with the Direct or Reportative evidentials in Korean. However, theories such as Satisfaction theory and Anaphoric presupposition theory cannot predict this result or explain the reason for it.

Let us consider the way the theory works. In SDRT theory, logical form is coherent only if its speech act discourse referents are properly mapped to rhetorical relations. To understand discourse structure, I will introduce a formal analysis of it and show a detailed picture of it through examples from Asher & Lascarides (2003).

(103) π_1 . John had a great evening last night.

π_2 . He had a great meal.

π_3 . He ate salmon.

π_4 . He devoured lots of cheese.

π_5 . He then won a dancing competition.

π_6 . ??It was a beautiful pink.

There are two discourse relations in (113): *Narration* and *Elaboration*. *Narration* is labeled with regard to coordination in the discourse structure and *Elaboration* is labeled with regard to subordination. For example, Narration (π_3, π_4) says that the discourse relation *Narration* holds between two utterances which are labeled π_3 and π_4 respectively. The SDRS $\langle A, F, \text{LAST} \rangle$ for the discourse in (114) is shown below.

(104) $\langle A, F, \text{LAST} \rangle$, where:

- $A = \{\pi_1, \pi_2, \pi_3, \pi_4, \pi_5, \pi_6, \pi_7\}$
- $F(\pi_1) = K\pi_1$
- $F(\pi_2) = K\pi_2$
- $F(\pi_3) = K\pi_3$
- $F(\pi_4) = K\pi_4$
- $F(\pi_5) = K\pi_5$
- $F(\pi_6) = \text{Elaboration}(\pi_1, \pi_6)$
- $F(\pi_6) = \text{Narration}(\pi_2, \pi_5) \wedge \text{Elaboration}(\pi_2, \pi_7)$
- $F(\pi_7) = \text{Narration}(\pi_3, \pi_4)$
- $\text{LAST} = \pi_5$

In (114), the whole content of the text, which is labeled as π_0 , is composed of π_1 and π_6 whose discourse relation is *Narration*. π_6 is composed of π_2 and π_5 whose discourse relation is *Narration*. π_7 is elaborated by π_3 and π_4 whose discourse relation is *Narration*. Note that the definition of SDRS permits speech acts discourse referents to be rhetorically related to multiple utterances in

the context.

Let's now turn to how SDRT deals with presupposition. Asher & Lascarides' (1998) proposal erases the distinction between presuppositions and accommodation: both of them are licensed when they are related in the discourse structure. This is the feature of the theory which differentiates itself from the original binding theory. Pragmatic information that is ignored by van der Sandt (1992) improved the power of explanation. At last, presupposition satisfaction is integrated with discourse coherence.

(105)

a.

π
$\pi : K_{\pi}$

b.

π', u
$\pi' : K_{\pi'}$ $R(u, \pi')$ $R=? \quad u=?$

(Asher & Lascarides 1998)

Well-formed SDRSs include a label π and this label acts as a speech act discourse referent. In addition, a rhetorical relation R takes speech act discourse referents as arguments. The procedure of interpreting the presuppositions begins by separating presuppositions and assertions. In (105), (105a) is a standard SDRS box for assertions and (105b) is a typical SDRS for presuppositions. Presuppositions are represented differently compared to assertions in two ways. First, presuppositions are distinguished from assertions in that they are rhetorically related to the discourse. The rhetorical relation is underspecified as $R=?$. Second, presuppositions are differentiated in the resolution of the attachment point, $u = ?$. Recall the mechanism of van der Sandt's theory. If the resolution of binding fails, context doesn't satisfy the presuppositions

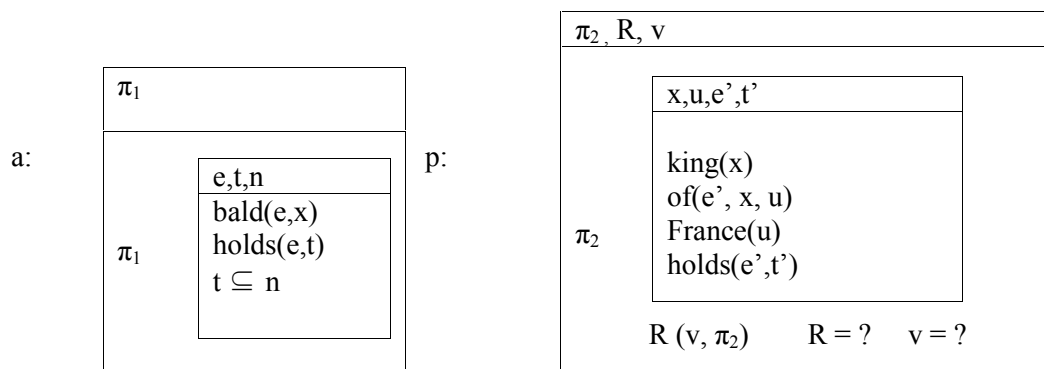
imposed by the sentence, and it is modified through accommodation: adding the presupposed content at the proper position in the context. In contrast with van der Sandt's theory, in SDRT, the SDRS does not move any further. Instead any attachment point is related to some accessible attachment site from the SDRS for presupposition. While presuppositions should be bound to other SDRSs, assertions cannot project out, but are confined to the site where they were introduced.

One tenet of this theory is that SDRT can provide an explanation of phenomena like anaphora bridging, presupposition, and accommodation under the same theoretical framework: the SDRT update procedure. When these occur in an utterance, its semantic interpretation is incomplete, and the truth conditions can only be determined on the basis of the discourse relations. I propose that Korean evidentiality can be accounted for under the binding theory of presupposition (van der Sandt 1992; Asher & Lascarides 1998; 2003). Before we proceed to Korean evidentiality, let us consider the process of modeling presuppositions.

(106) The king of France is bald.

As shown in (105), the procedure for interpreting presuppositions begins by separating presuppositions and assertions. One is a SDRS box for presupposition that 'there is a King of France' and another is a SDRS for assertion that 'he is bald.'

(107)

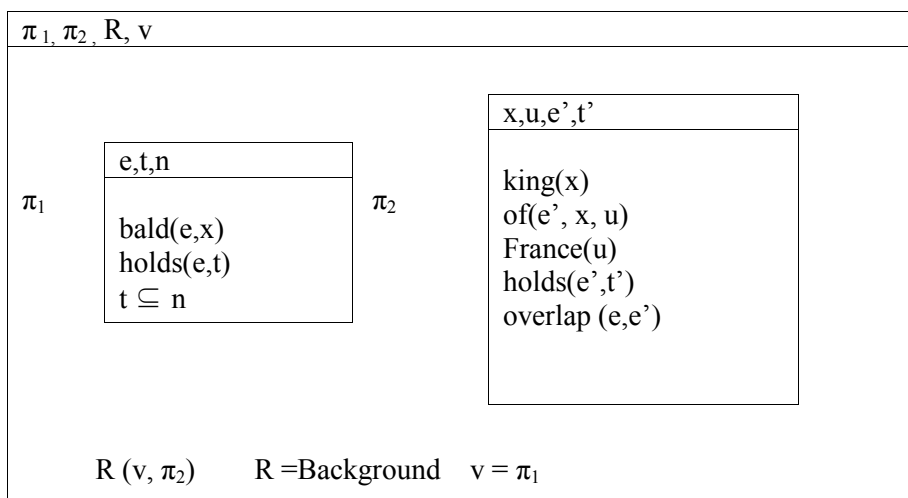


(Asher & Lascarides 1998)

Based on SDRT's update system, first the SDRS assertion is updated to the empty set and then then p should be updated. SDRT's glue logic works for this. Asher & Lascarides (2003: p. 37) define the glue logic as a logic that constructs the logical form of the discourse. A logical form of the discourse which can be interpreted by the logic of information content is SDRS $\langle A, F \rangle$ that assigns labels like formulae of the form $R(\alpha, \beta, \lambda)$ containing the formula linking the label α to the label β by the discourse relation R , so that v is resolved to π_1 because it is the only possible accessible site and R is resolved to *Background*. The discourse relation of *Background* requires that the aspect of information treated as background to another proposition should be stative. The *Axiom on Background*⁴⁴ provides additional information about the temporal relation between the events, i.e., if a proposition β is linked by *Background* to α , the event plugged in α and the event plugged in β should overlap temporally. This type of information can be useful for identifying the attachment site as well as the correct discourse relation. At last, (108) is the final representation of SDRSs as a result of presupposition update.

⁴⁴ Axiom on Background: $\text{Background}(\alpha, \beta) \rightarrow \text{overlap}(e_\alpha, e_\beta)$

(108)



(Asher & Lascarides 1998)

Asher & Lascarides (1998) presents two kinds of discourse relations of presuppositions. One of them is *Background* which we have reviewed in the current subsection and another is *Defeasible Consequence*, in which the presupposition is defeasibly inferable from the accessible attachment point as well as from additional information from the context. Asher & Lascarides (1998) predicts that one of two rhetorical relations always links a presupposition to the discourse context, unless the presupposition trigger requires a specific discourse relation like *too* in English (*Parallel*). I have already discussed the fact that the Korean evidentials are presupposition triggers in chapter 3. Thus, two rhetorical relations are good candidates for the purpose of an analysis of Korean evidentials. However, we can not apply *Background* to Korean evidentials because Korean evidentials do not follow the *axiom on Background*. Korean evidentials like *te* or *tay* evoke another event as an accommodation in the context such as *seeing* and *hearing* and refer to a certain time in the past. In the case of *te*, whose presuppositional content describes an event that a speaker witnessed in the past and is not allowed in ‘here and now’ situations which are related to

assertion in most cases. This conflicts with coherence constraints and the condition of overlap does not hold according to the *axiom on Background* any more. Alternatively we can try to find a specific discourse relation which licenses Korean evidentials.

4.3 Presuppositional Analysis of Korean Evidentiality

4.3.1 A Formal Analysis of the Direct Evidential *te*

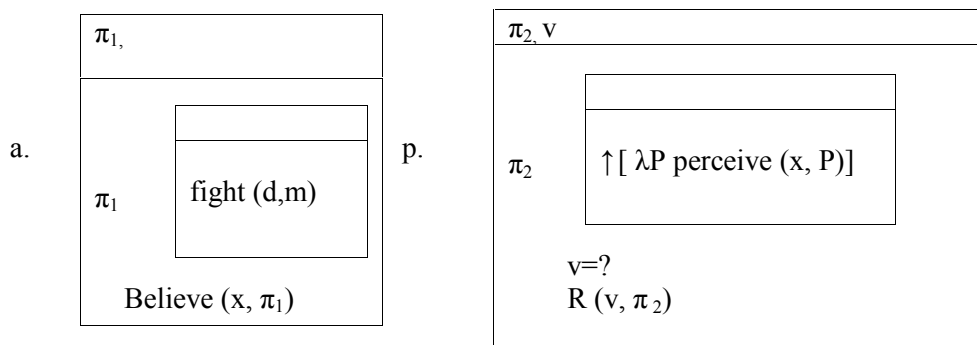
As observed in Asher (2000), Murray (2010), and Simons (2007) among others, the parenthetical use of clause embedding verbs in English shows a kind of evidentiality. In particular, while embedding clauses fulfill an evidential function such as source of information or, a speaker's certainty about the embedded clause, the embedded clause presents the asserted information of the utterance. For example, Murray (2010) demonstrates that Cheyenne Reportative evidentials can be translated to the parenthetical 'I hear'. I assume that the Korean direct evidential is similar with certain English parentheticals like *assure*, *fear* and so on. Based on the previous literature above, I adopt the analysis of English parenthetical in Asher (2000).

(109) Dongho -wa Minci-ka ssawu-te-la.

Dongho -Com Minci-Nom fight-Ev-Dcl

'A speaker observed that Dongho and Minci fought.'

(110)



In chapter 3, I argued that Korean evidentials are presupposition triggers. The procedure of interpreting the presuppositions begins by separating presuppositions and assertions. Based on SDRT's update system, two SDRSs are represented as *a* (assertion) and *p* (presupposition) respectively. I will assume that syntax can isolate out the evidential and that a lexical analysis paraphrases *te* as *perceive* because Korean evidential *te* can be used to show that the speaker has direct evidence which had been acquired based on sensory input such as visual, auditory or even gustatory information.

As mentioned in chapter 3, a presuppositional approach to Korean evidentials can be integrated into an analysis of Presuppositional Indexicals (PI) by Hunter (2010) in that some Korean evidentials with the feature of indexicals are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. This proposal draws an important implication. SDRSs of PI allow discourse referents and conditions to be introduced through the extra-linguistic context. The outermost SDRS is always relevant to the context of utterance such as a speaker, time, and world. Thus, representations of perceptual information can be constructed in the actual context. I believe that Hunter's proposal offers an account of Korean evidentiality because her theory can adequately explain how a speaker acquires evidence based on perceptual information.

In (110), modal operator (\uparrow) determines the scope of resolution for the presuppositions triggered by the Direct evidential as the outermost DRS possible. Inspired by Hunter (2010), *te* and agent x is evaluated relative to the actual world.

I adopted the analysis of Asher & Lascarides (1998) for the representation of (110). Logical form of the discourse which can be interpreted by the logic of information content is an SDRS $\langle A, F \rangle$ that assigns labels like a formulae of the form $R(\alpha, \beta, \lambda)$ containing the formula linking the label α to the label β by the discourse relation R . As shown above in (110), *te* requires a specific discourse relation of *Evidence* which is given by the lexical meaning of *te*. So R is resolved. $v = ?$ is underspecified condition now. They are easily resolved because there is only one accessible element π_1 for both of them. Lastly, $x = ?$ should be resolved. In (110), it is resolved by a speaker. It seems to be a redundant element in the analysis. However, as indicated by Asher (2000), evidentials are always evidence for someone. Recall the interrogative flip in 3.1.3. A speaker can evaluate the encoding information and assess the truth of the proposition in the declarative sentence, whereas the addressee can evaluate the encoding information and pick true answers from possible answer sets in the interrogative sentence. If $x = ?$ is not incorporated into this analysis, an important property of evidentials is lost. So I added this condition to SDRS. x is always a speaker or an addressee according to the type of speech act.

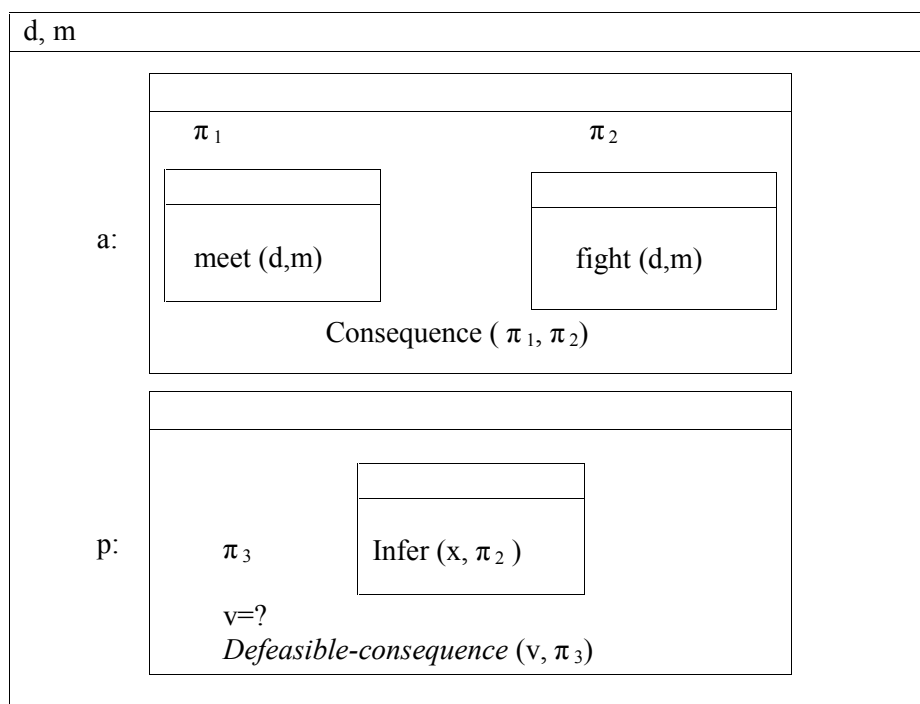
Recall that the Direct evidential *te* combined with tense and modal markers like *ess* and *keyss* conveys an Inference evidential interpretation. K. Chung (2005) and J. Lee (2011) observed that *te* in the absence of other TAM markers like *ess* and *keyss* conveys a Direct evidential interpretation and that the Direct evidential *te* combined with TAM markers conveys an Inference evidential interpretation.

(111) Dongho -wa Minci-ka -ka manna-myen ssawu-keyss-te-la.

Dongho -Com Minci-nom meet-if fight-Mod-Ev-Dcl

‘It is certain that Dongho and Minci fight if they meet.’

(112)



In (111), the interaction of the indexicals and semantic operators is allowed here. The attachment possibilities for SDRSs with the evidential are determined by the resolution of the anaphoric element. In particular, if the presupposition finds an acceptable antecedent in intermediate level, it is bound to it. Hunter & Asher’s (2005) analysis entails that different presuppositions may require different resolution strategies depending on their environment or associated presupposition triggers. This view contrasts with the standard view of presuppositions, but is well supported by examples of presupposition triggers like *too*, where accommodation is not possible. SDRS in (112) corresponds to that of *ci*. I just show representation here and explain it later in 4.3.3.

4.3.2 A Formal Analysis of the Reportative Evidential *tay*

4.3.2.1 An Analysis of *tay*

The procedure of interpreting *tay* is similar with that of interpreting *te* because both of them are analyzed in the basis of presupposition and relevant with the discourse relation, *Evidence*.

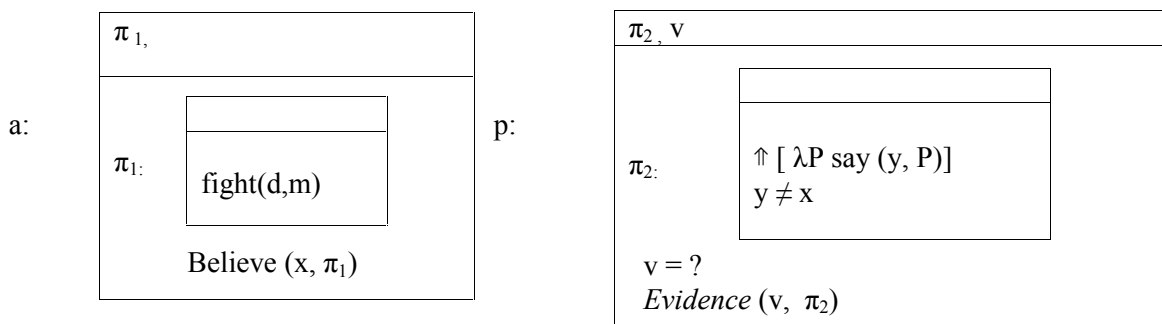
However, there are two significant differences between them. First, inspired by Hunter & Asher (2005), evidential content of *tay* is resolved via a different type of modal operator (\Uparrow). Korean evidentials with the feature of indexicals are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. This proposal draws an important implication. DRSs of PI allow discourse referents and conditions to be introduced through the extra-linguistic context. The outermost DRS is always relevant to the context of utterance such as a speaker, time, and world. Hunter & Asher (2005) proposed a special type of operator (\Uparrow) which is rigidly fixed to presuppositional content in lexical level and it is always resolved in the outmost DRS. They also argued that English *I* can be forced by \Uparrow . I assume that Korean Reportative evidential also should be forced by \Uparrow because *tay* is not interacted with semantic operators such as negation, conditionals and the various modalities. I could not find any counterexample of its rigidity. Second, $y \neq x$ is added as condition. This condition is crucial because it allows a speaker to escape from any commitment to the truth or falsity of the prejacent.

(113) Dongho -wa Minci-ka ssawu-ess-tay.

Dongho -Com Minci-Nom fight-Ant-Ev

‘The speaker heard that Dongho and Minci fought.’

(114)



The basic process of information update is same with that of *te*. Two SDRSs are represented as *a* (assertion) and *p* (presupposition) respectively. The discourse relation comes from the lexical meaning of *tay* which can introduce *Evidence*. In the representations above, $v = ?$ is underspecified conditions. They are easily resolved because there is only one accessible element π_1 . Lastly, $y \neq x$ is added as condition.

4.3.2.2 The Reportative Evidential: Verdical or Nonverdical

In 3.2.1.4, I introduced two opposite perspectives on Korean Reportative evidentials. As noted in Faller (2006), Reportative evidentials in Cuzco Quechua have two conflicting properties: (i) they participate in verdical rhetorical relations such as *Narration*, *Result*, etc., but (ii) the speaker does not express that she believes the propositional content *p*.

Lim (2010) proposed that Korean Reportative evidentials only allow the verdical relations and rejected the second option by Faller. One of his main ideas is that Korean evidentials are presupposition triggers. Based on this assumption, he argued that utterances with evidentials become infelicitous when the following utterances reject the previous one because the assertion of a sentence with an evidential is compatible with the prejacent because the speaker is committed to

the truth or falsity of the proposition. Therefore, an utterance with evidentials rejected by a following utterance is infelicitous due to contradiction.

On the other hand, Chung (2010) seems to argue the second point by Faller (2006) above. Faller (2002) proposed that *-si* is a function from a speech act of assertion into a speech act of presentation by which a speaker plays a role of channel of communication between the source and the addressee. Accordingly, a speaker escapes from any commitment to the truth or falsity of the prejacent. Chung (2005; 2010) proposed that the Korean Reportative evidential *tay* indicates the presentation speech act, following Faller (2002). In this subsection, I will try to unify these two different views in SDRT. Consider the examples in (115).

- (115) a. Taewoo-ka tambay-lul kkunh-ess-tay. Cengmal kenkanghayci-ess-e .
 Taewoo-Nom cigarette-Acc quit-Ant-Ev. really become· healthy-Ant-Dcl
 ‘(It is said) Taewoo quit smoking. He became really healthy.’
- b. Taewoo-ka tambay-lul kkunh-ess-tay. Kukes-un sasil-i ani-ya.
 Taewoo-Nom cigarette-Acc quit-Ant-Ev. That-Top fact-Nom Neg-Dcl
 ‘(It is said) Taewoo quit smoking. That is not true’

Faller (2006) proposed that SDRT provides such a separation of discourse content and cognitive modelling and offers a comprehensive analysis of the CQ Reportative evidential. The merit of the presuppositional analysis is that another layer like cognitive modeling is not required. In (115a), the whole content of the text, which is labeled as π_0 and π_0 is composed of π_1 ((It is said) Taewoo quit smoking) and π_4 (He became really healthy). π_1 is composed of assertion, π_2 (I believe that Taewoo quit smoking) and presupposition, π_3 (Someone else said that Taewoo quit smoking)

whose discourse relation is *Evidence*. The discourse relation of π_1 and π_4 is *Result*. On the other hand, in (115b), the whole content of the text, which is labeled as π_0 and π_0 is composed of π_1 ((It is said) Taewoo quit smoking) and π_4 (That is not true). π_1 is composed of assertion, π_2 (I believe that Taewoo quit smoking) and presupposition, π_3 (Someone else said that Taewoo quit smoking) whose discourse relation is *Evidence*. The discourse relation of π_3 and π_4 is *Correction*. How can we account for the difference between (115a) and (115b)? Generally, if discourse content with the Reportative evidential is integrated to the discourse, veridical relation is preferred because in most cases there is no reason to disbelieve the prejacent from the report. If necessary, the move to the nonveridical relation is triggered by discourse cues: e.g., if we have a contrast between two points of view following context, the nonveridical usage is preferred. Accordingly, the presuppositional analysis has an advantage over other theories because it can account for the conflicting phenomena from united point of view.

4.3.3 A formal Analysis of the Inference Evidential *ci*

Note that Korean evidential *ci* can be used to show that a speaker has made an inference or deduction based on facts other than on a direct observation. This evidential content can be exploited in order to present the proposition as inferred from some other proposition in the context, or from some fact which is part of the contextually shared knowledge of the participants. The speaker may also keep the premises of his/her inference private. I believe that the core notion of *ci* is strongly connected to nonmonotonicity. It picks out a plausible sequence of premises in the context and functions as a logical closure in the consequent. Formally, a sequence of premises in the context dynamically entails a conclusion iff updating the minimal information state with the premises keeps an information state that affirms the conclusion (Veltman 1994).

Following Asher & Lascarides (1998), I analyzed the formal representation of *ci*. In the

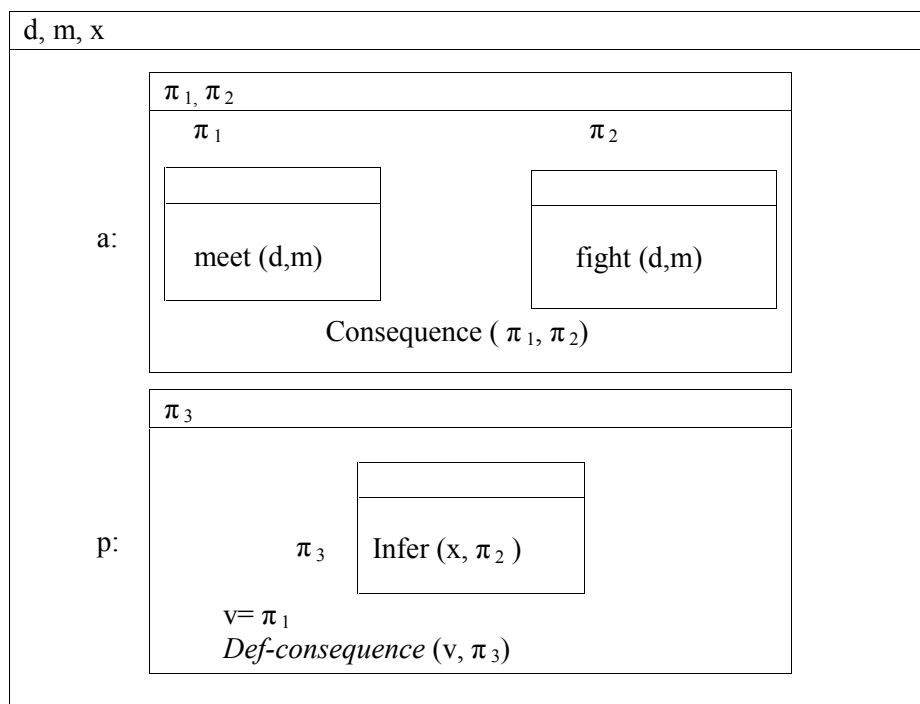
analysis of Asher & Lascarides (1998), conditional presuppositions are attached to the previous context via a discourse relation of *Def-Consequence*. This process is defended by general deduction from the conditional. Let us look at this in detail from Asher & Lascarides (1998). According to the convention of presupposition, we can attach $\partial(C)$ to B in the context $A > B$, where $>$ is some standard conditional operator. In many conditional logics (Lews 1973; Asher & Morreau 1991), $A > (B \wedge \partial(C))$ is equivalent to $A > B$ and $A > \partial(C)$. Therefore, they conclude that the relevant relation, *Defeasible Consequence*, holds between the antecedent and the presupposition. On the other hand, for the Inference evidential, I assume that *ci* requires a specific discourse relation of *Def-Consequence*. Accordingly, R is resolved in its SDRS on the lexical level.

(116) Dongho-wa Minci-ka manna-myen ssawu-ci.

Dongho-Com Minci-nom meet-if fight-Ev

‘It is certain that Dongho and Minci fight if they meet.’

(117)



In (116), I assume that the Korean Inference evidential is similar to certain English parentheticals like *assure*, *fear* and so on. Based on the assumption, I adopt the analysis of English parentheticals by Asher (2000) again. To understand the full picture of evidential *ci*, I analyze a conditional because the core interpretation of *ci* comes from the relation between the premises and consequence. Two SDRSs are represented as *a* (assertion) and *p* (presupposition) because *ci* is a presupposition trigger. Following the convention of SDRT, a logical form of the discourse which can be interpreted by the logic of information content is $\langle A, F \rangle$ that assigns labels. π_1 represents the antecedent that ‘Dongho and Minci meet’. The cue word *if* evokes a *Consequence* relation between the speech act discourse referent π_1 and another discourse referent, π_2 which represents the consequent that ‘they fight.’

As shown above, *ci* requires a specific discourse relation of *Def-Consequence*. In 3.2.3.4, I

demonstrated that the three types of Korean evidentials which appear in the consequent of conditional show different ranges of scope. In particular, Direct and Reportative evidentials can project out their content from the conditional. On the other hand, the Inference evidential always limits its content under the conditional or the previous context and its presuppositional content is resolved by binding via a discourse relation of *Def-Consequence*. So R is resolved by *Def-Consequence*. The object of the evidential is specified as π_2 , v is resolved by π_1 because this is reserved for any premise in the context⁴⁵. Hence, *Def-Consequence* triggered by the Korean evidential *ci* holds between the antecedent and the evidential.

⁴⁵ According to Asher & Vieu (2005), it is possible that discourse structures have more than minimal number of nodes with regard to presuppositions. The SDRSs in (119) is inspired by their proposal.

Chapter 5

Conclusion

5.1 Further Issues

5.1.1 A temporal Analysis of Evidentials

In the previous chapters, I reviewed and compared three different theoretical frameworks: modal, illocutionary and presuppositional analysis. I reject a modal or an illocutionary analysis based on several diagnostic tests and employ a presuppositional analysis for Korean evidentiality. I, however, did not consider evidential type which is referred to as *temporal-like evidentials* by Koev (2011). One of the main ideas of Koev's proposal is that tense has a very strong influence in deciding the implication of evidential content compared to the source of information. Relatedly, Koev (2011) argued that "Bulgarian evidentials are 'secondary tense' morphemes which express a temporal relation between a past learning event/secondary 'now' and the topic time." Consider the following example.

(118) On Saturday morning Jack goes to New York. You learn about it on Saturday afternoon, say from a mutual friend. A few days later you say:

a. V sybota sutrin-ta Džak #oti-de-Ø /oti-šy-l do NY
 on Saturday morning-DEF Jack go-3SG.PST-DIR/ go-PST-IND to NY
 'On Saturday morning Jack went to New York, as I learned later.'

b. V sybota Džak oti-de-Ø /?? oti-šy-l do NY
 on Saturday Jack go-3SG.PST-DIR / go-PST-IND to NY
 'On Saturday Jack went to New York, as I learned then.'

Based on the examples in (118), Koev argued that the Direct evidential signals that a speaker learned the propositional content before or during the reference time. On the other hand, the indirect evidential signals that a speaker learned the scope proposition after the reference time. Let us take a look at (118). In (118a), when the reference time precedes the learning time, only the Indirect evidential is allowed. This is the normal behavior of the Indirect evidentials. However, when the reference time includes the learning time, the Direct evidential is preferred over the Indirect evidential in (118b). According to Koev (2011), only temporal analysis accounts for this. If the same result as for Bulgarian evidentials holds for Korean, we may reconsider the typology of Korean evidentiality.

- (119)** On Saturday morning Dongho goes to New York. You learn about it on Saturday afternoon, say from a mutual friend. A few days later you say:
Thoyoil-ey Dongho-ka nyuyok-ey ??ka-ss-te-la/ ka-ss-tay.
Saturday-Loc Dongho-Nom New York-Loc go-Ant-Ev-Dcl/go-Ant-Ev.
'On Saturday Dongho went to New York, as I learned then.'

The example in (119) is the Korean version of (118b). As shown in (119), it is hard to find any strong relation with regard to tense here. The Reportative evidential is preferred in (119) because the source of information is what someone else said. Although Korean evidentials are not seriously temporal-like ones, tense is incorporated into Korean evidentiality in the obvious way. However, a further examination of the relation between tense and evidentiality is deferred to future work.

5.1.2 Are Korean Evidentials Conventional Implicature?

In chapter 3, I conveyed various tests such as negation, challengeability and the interrogative flip and argued that these tests support for classifying the Korean evidentials as presuppositional. In general, projection tests, e.g. negation test, have been relevant to presupposition. However, Simons et al. (2010) provided more unified analysis of projection tests by adopting the notion of at-issueness. That is, they demonstrated that at-issueness is related to decide whether or not elements of content can project out from operators such as negation or modals. This line of approach appears in Murray's (2010) analysis of evidentials in Cheyenne. Murray (2010) argued that Cheyenne evidentials contribute to non-at-issue assertions but do not interact with at-issue assertions. Koev (2011) also proposed that Bulgarian evidentials contribute not-at-issue content that is conventional implicature by Potts (2005). One important aspect of this proposal is that it provides a unified account of projection, regardless of whether the projecting element is a classical presupposition or a conventional implicature. At this point, one might think that conventional implicature is a viable alternative treatment to presupposition with regard to an analysis of evidentials because both of them are subsumed under not-at-issue content. However, It is incorrect prediction.

Potts (2005) argued that conventional implicature (CI) is scopeless, i.e. they are not affected by semantic operators. It is known that CIs are scopeless with respect to semantic operators over asserted content, such as negation, conditionals and the various modalities. In contrast, as shown in 3.2.3.4, the three types of Korean evidentials are allowed to occur in the consequent of conditional but show various ranges of scope. For example, the Inference evidential always limits its content under the consequent. As illustrated in 3.2.2.3, the Korean evidential *te* can be embedded in the antecedent of a conditional and its evidential content is cancelled. In sum, Korean evidentials are not scopeless.

Potts (2005) also demonstrated that backgrounded CIs are redundant, i.e. CI should be new information. Let us look at the example in (120).

(120) Lance is a cyclist. #Lance, the cyclist, battled cancer.

As indicated by Potts (2005), backgroundedness is a typical feature of presuppositions and it does not affect the interpretation of sentences.

(121) Nay-ka po- ass-e. Minci-ka aphu-te-la
I-Nom see-Ant-Dcl Minci-Nom sick-Ev-Dcl
‘I saw it. I observed that Minci was sick.’

In (121), the first utterance conveys the evidential content of the second utterance. If Korean evidential is CI, the example in (121) should be infelicitous because the previous context makes CI old information. However, any defect of the discourse is not found in (121); this is some evidence that Korean evidentials are presupposition triggers. In this subsection, I discussed CIs and showed that CIs are not suited for an analysis of Korean evidentials.

5.1.3 Kaplanian Approach to Korean Evidentials: D. Lim (2010)

I have argued that binding theory of presupposition contributes an account of Korean evidentiality in chapter 3. As mentioned in chapter 4, this idea is combined with an analysis of Presuppositional Indexicals (PI) by Hunter (2010). Her main claim is that indexicals are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. However, whereas PI has recently received an attention, Kaplan’s (1989) theory is treated as a standard theory of indexicals. He

pointed out that indexicals like *I*, *here*, *now* are semantically rigid because they always pick their referents directly from the context, not from the world. Interestingly, D. Lim's (2010) presuppositional analysis of the Korean Reportative evidential hinges on the Kaplanian theory of indexicals

I have argued that Interrogative flip is strong evidence that context shifting can occur in the most global context, i.e., the outermost DRS. The outermost DRS is always relevant to the context of utterance such as a speaker, time, and world. Recall that evidentials shift from being from speaker-anchored to being addressee-anchored in question. Consider the examples in (122) below.

(122) a. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-tay.

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev

‘Chulswu and Tayho drank sojwu yesterday.’

ev= A speaker has reportative evidence that Chulswu and Tayho drank sojwu yesterday.

b. Chulswu-ka Tayho-hako ecey sojwu-lul masi-ess-tay-ni?

Chulswu-Nom Tayho-Com yesterday liquor-Acc drink-Ant-Ev-Int

‘Did Chulswu and Tayho drink sojwu yesterday?’

ev= An addressee has reportative evidence that Chulswu and Tayho drank sojwu yesterday.

D. Lim (2010) offers that evidentials behave like indexicals. D. Lim recognized evidentials are also speaker-dependent, in the sense that their interpretations vary depending on who speaks them.

However, based on the example of (122), he also admits that there is a crucial difference between evidentials and other indexicals in the sense that the speaker-dependency of evidentials can shift in question, whereas that of indexicals cannot. His solution is to introduce Hamblin's (1973) theory in addition to Kaplanian theory. I will not explore his work in detail but demonstrate some reasons that I cannot adopt Kaplanian theory. Kaplan (1989) built his theory based on the assumption that there is no monster in natural language. However, Schlenker (2003) proved convincingly that there are monsters in natural language. I believe that some Korean evidentials are one of them. Moreover, I should throw away the Korean Inference evidential if I follow Kaplanian way. In fact, D. Lim (2010) does not include the Korean Inference evidential in his work.

5.2 Summary

I have argued that Korean evidentiality can be best accounted for on the basis of the binding theory of presupposition (Asher & Lascarides 1998; Asher 2000). The proposal I motivate in this dissertation is that interpretations of Korean evidentials can be handled using the same mechanism which resolves anaphoric expressions. Dynamic Semantics such as DRT and SDRT can provide an explanation of phenomena like anaphora bridging, presupposition, and accommodation under the same theoretical framework: the update procedure of the discourse structure. In this regard, when any type of Korean evidentials occur in an utterance, their semantic interpretations are incomplete, and their meanings can only be determined by the discourse context and the interaction with other operators, e.g., TAM markers.

In chapter 2, I present Korean evidential system, and point out the similarities as well as differences between Korean evidential system and cross-linguistic predictions. I propose that the system of Korean evidentiality is compatible with the B-I system in Aikhenvald (2004: p. 105).

Three evidentials in Korean can mark distinct sources of information: Direct *te*, Reportative *tay*, Inference *ci*.

(123) B1: Direct, Reportative, Inference

Te: the speaker has direct (perceptual) evidence for the claim.

Tay: the speaker heard the information expressed in a claim from someone else.

Ci: the speaker's background knowledge, plus inferencing, leads him to believe the information in the claim to be true.

<Korean evidential system>

The Korean verbal suffixes can be classified into two groups based on their distribution in the verbal complex: non-terminal suffixes and terminal suffixes. This distinction is important in that the main function of each type of suffix is differentiated depending on its distribution.. In particular, the direct evidential *te* is located in a non-terminal position of the sentence which is mainly reserved for TAM markers in Korean. On the other hand, the Inference evidential *ci* in this dissertation is distributed in the sentence final position which is reserved for sentence types. This is predicted by Aikhenvald (2004: pp. 80-82) in that evidentials can be realized via several different grammatical or syntactic categories in the cross-linguistic survey.

Moreover, I explored the intonation of Korean evidentials based on the observation that a speaker's degree of certainty is sensitive to the context or the combination of evidentials and other categories such as epistemic modality and tense. The first purpose of the experiment is to examine the existence of anaphoric relations between the source of information and the evidential. I also designed this experiment to investigate interactions between evidentials and TAM markers. The result of experiment confirms that evidentials and other categories such as

tense, aspect and epistemic modality can be integrated into a single complex system (TAME) proposed by Mithun's (1986).

In chapter 3, I claimed that Korean evidentials are presupposition triggers. I conveyed various tests such as negation, challengeability and the interrogative flip and suggested that these tests support for classifying the Korean evidentials as presuppositional. I also reviewed and compared three different theoretical frameworks: modal, illocutionary and presuppositional analysis. In particular, the illocutionary analysis presents an analysis of evidentiality based on speech act theory inspired by Searle and Vanderveken (1985) and treats evidentials as illocutionary operators (Faller 2002; Murray 2010), whereas the modal analysis assumes that evidentiality is a subtype of epistemic modality and treats evidential implications as presuppositions (Izvorski 1997; Matthewson et al. 2007). Unfortunately, we cannot clearly explain Korean evidentials under any one of these analyses. In fact, any theory which assumes a uniform morpho-syntactic category for evidentiality in Korean faces the same problem. Therefore, I reject a modal or an illocutionary analysis based on several diagnostic tests and employ a presuppositional analysis for Korean. The advantage of my analysis becomes clearer when only presuppositional analysis can explain the phenomenon like trapping. Korean evidentiality showed that the speaker-dependency which is explicitly associated with characteristics of indexicals. Just as in the line of work stemming from Hunter & Asher (2005), I propose that Korean evidentials are anaphorically resolved by the extra-linguistic context as well as by the linguistic context following Hunter & Asher (2005).

In chapter 4, my main purpose is to build the formal analysis of Korean evidentiality. I investigated Korean evidentiality based on well-known proposal by van der Sandt (1992): all presuppositions are anaphoric. Asher & Lascarides (1998) account for presuppositions within SDRT, an extension of the dynamic semantic theory of DRT, which add another level of analysis

that handles rhetorical relations such as *Narration*, *Background*, *Explanation* and so on (Asher 1993; Asher & Lascarides 2003). The procedure of interpreting the presuppositions begins by separating presuppositions and assertions. Based on SDRT's update system, two SDRSs are represented as *a* (assertion) and *p* (presupposition) respectively.

In the case of *te*, I assumed that syntax can isolate out the evidential and that a lexical analysis paraphrases *te* as *perceive* because Korean evidential *te* can be used to show that the speaker has direct evidence which had been acquired based on sensory input such as visual, auditory or even gustatory information. Korean evidentials with the feature of indexicals are anaphorically resolved by the extra-linguistic context as well as by the linguistic context. This proposal draws an important implication. DRSs of PI allow discourse referents and conditions to be introduced through the extra-linguistic context. The outermost DRS is always relevant to the context of utterance such as a speaker, time, and world. Modal operator (\uparrow) determines the scope of resolution for the presuppositions triggered by the Direct evidential as the outermost DRS possible, inspired by Hunter (2010). Thus, *te* and agent *x* is evaluated relative to the actual world.

Tay is resolved via another type of modal operator (\Uparrow). Hunter & Asher (2005) proposed a special type of operator (\Uparrow) which is rigidly fixed to presuppositional content in lexical level and it is always resolved in the outermost DRS. They also argued that English *I* can be forced by \Uparrow . I proposed that Korean Reportative evidential also should be forced by \Uparrow because *tay* is not interacted with semantic operators such as negation, conditionals and the various modalities. I could not find any counterexample of its rigidity. Second, $y \neq x$ is added as condition. This condition is crucial because it allows a speaker to escape from any commitment to the truth or falsity of the prejacent.

Following Asher & Lascarides (1998), I analyzed the formal representation of *ci*. In the analysis of Asher & Lascarides (1998), conditional presuppositions are attached to the previous context via a discourse relation of *Def-Consequence*. The Inference evidential always limits its content under the conditional or the previous context and its presuppositional content is resolved by binding via a discourse relation of *Def-Consequence*. So R is resolved by *Def-Consequence*. The object of the evidential is specified as π_2 . v is resolved by π_1 because this is reserved for any premise in the context. Hence, *Def-Consequence* triggered by the Korean evidential *ci* holds between the antecedent and the evidential.

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